7. ALEUTIAN ISLANDS

(1) This chapter describes the Aleutian Islands and the many passes leading from the Pacific Ocean into the Bering Sea. Also described are the harbors of Dutch Harbor on Unalaska Island, Kuluk Bay on Adak Island, Massacre Bay on Attu Island, and many other smaller harbors in the Aleutian Islands.

(2) **Charts 16011, 16012.–Aleutian Islands,** extending in a 900-mile arc from Unimak Island to Attu Island, are a westward continuation of the Alaska Peninsula and form the southern limit of the Bering Sea. The most important groups of islands in the chain are Fox Islands, Islands of the Four Mountains, Andreanof Islands, Rat Islands, and Near Islands.

(3) Most of the islands are mountainous; the coasts are bluff and exposed; the shores are bold, with many off-lying islets, rocks and reefs; the beaches are rocky and narrow; and the water is usually deep close to shore. As a rule, seabottom features are similar to those of the adjacent land.

(4) **Anchorages.**–Most of the larger islands in the Aleutians provide some sheltered anchorages as mentioned in the text for the individual places. The better known harbors are: Akutan Harbor on Akutan Island, Dutch Harbor on Unalaska Island, Nazan Bay on Atka Island, Kuluk Bay on Adak Island, Constantine Harbor on Amchitka Island, Kiska Harbor on Kiska Island, and Massacre Bay on Attu Island.

(5) **Dangers.**–Nearly all beaches in the Aleutian Islands present natural obstacles to landing. The shores are generally precipitous; the breakers are heavy and in many cases the approaches are filled with jagged rocks and kelp beds which are unusually abundant in the Aleutians; in winter, the kelp disappears entirely. Sand beaches are rare; usually being found only at the heads of bays; and in no case does a beach extend more than 50 yards inland from the high-water line.

(6) When heavy swells and seas are encountered along a beach, a landing in a small boat should not be attempted as there are strong and dangerous undertows accompanied by variable currents. In addition to the lack of surveys, navigation in this region is made difficult by the prevailing thick weather and further by the lack of knowledge of the currents which attain considerable velocity at times.

(7) **Currents.**–S of latitude 50°N., is an E drift across the Pacific. An eddy, accompanying this flow, sets W along the S shore of the Alaska Peninsula and the Aleutian Islands and then drifts through the passes into the Bering Sea. These currents form a part of the general circulation of the North Pacific Ocean.

(8) Through the Aleutian Islands passes, the velocities of the currents caused by tidal and wind effects are large enough to mask the continual N drift through the passes.

(9) In the past, numerous reports have been received to the effect that the flood currents flowing into the Bering Sea are very much stronger than the ebb currents. These reports have been largely discounted by observations in a number of the passages which in general reveal equally strong ebb currents flowing through the passes from the Bering Sea. It is believed that because of the large diurnal inequality in the current of this region, mariners have been deceived by the long periods of flood current that occur near the times of the moon's maximum declination.

(10) Currents are highly complex, making generalizations impossible. They set counter to general trends in many places along shores, even within major passes. Whirls and eddies in wide distribution further complicate the problem.

(11) All passages in the Aleutian Islands have strong currents. In the narrow Akun Strait, the current is reported to reach a velocity of 12 knots. Because of the scarcity of reliable observations, definite current predictions can be made for only a few of the passes. Current predictions for some of the more important passes may be obtained from the **Tidal Current Tables.** The effect of the tidal currents has often been felt offshore at a considerable distance from the passes, resulting in unexpected sets. Mariners should guard against such contingency. In the region of the Aleutian Islands the navigator must heed the currents carefully; a vessel is in more danger there from that cause than from any other, except the lack of surveys. In bad weather, the currents cause much heavier seas, and this effect has been noticed as much as 20 miles off the passes.

(12) In general, tide rips occur to the S of the passes on the ebb and to the N on the flood, furnishing a rough means of determining the set of the current, although local tide rips may be caused by detached banks.

(13) Tide rips even well off the entrances may appear as broken, choppy seas, with a few steep, short swells near the edge. In rough weather, the effect is to make the seas higher and steeper. The tide rips are much more noticeable during periods of tropic tides. Whirls are more likely to occur in the passes near the times of slack water.

(14) A characteristic of the currents in the vicinity of the Fox Island Passes is the sudden change from slack to strength of flood. A change from slack to almost 2 knots in 10 minutes has been noted, and in many cases the maximum flood occurs within 1½ hours after slack. It is therefore probable that the worst tide rips occur at the first of the flood, and under exceptional combinations of weather and tropic tides an effect resembling a bore may be caused in the narrower passes.

(15) In Unimak Pass the current is probably strongest between Scotch Cap Light and Ugamak Island, where at strength of flood or ebb the velocity averages about 3 knots, but the maximum may exceed this figure considerably during tropic tides when 6 knots during the flood and 6.5 knots during the ebb are to be expected.

(16) The current has a large diurnal constituent that at times of tropic tides may cause the current to set continuously in a flood direction for as much as 18 hours.

(17) The set of the flood in Unimak Pass averages about 300°. A vessel proceeding from Unimak Pass toward Avatanak Strait will experience a set when off Ugamak Strait and off Derbin Strait. When crossing the deep, usually marked by tide rips, N of Derbin Strait, a strong set in the direction of the axis of the deep is often experienced. Only weak currents are noted along the shore of Tigalda Island, but farther to the N strong ebb currents, setting toward Avatanak Strait, have been encountered.

(18) Tide rips occur off the E end of Ugamak Island and in places where there is a sudden change of depth.

(19) Instances have been reported of vessels, hove-to N of Unimak Pass and waiting for clear weather, being carried through the pass by the current and finding themselves on the opposite side when the fog lifted.

(20) In Akutan Pass the currents have an average velocity at strength of about 5.5 knots; however, velocities of 9 knots may occur.

(21) The tide rips in Akutan Pass are strong during the periods of largest tides. With a heavy NW wind, the rips are menacing in the vicinity of the 15-fathom spot just S of Cape Morgan. They are confused and make a vessel very uncomfortable; they are dangerous for small craft. However, the strongest rips are not generally found in the middle of the pass. With a current setting N, the rips will be strongest in the N entrance, and with a current setting S, the strongest rips will be found at the S entrance to the pass. When the current setting N is opposed by a strong N wind, the tide rips in the N entrance to the pass are dangerous, and it is advisable not to use this pass in a gale. Under ordinary conditions, when there are no strong winds, this pass can be used by full-powered steamers at any stage of the current, but sailing vessels should not use it except at or near slack water. It is said that the most dangerous rips occur at the N entrance to the pass.

(22) In Unalga Pass, NE of Fisherman Point near the center of the pass, the average tidal current at strength is about 6 knots. At times of tropic tides, current velocities may reach 9 knots. The maximum velocity occurs in a short stretch between Fisherman Point and Unalga Island, and the strongest current can be avoided by favoring the Unalga Island shore. The current along the S side of Unalga Island will rarely exceed 2 knots.

(23) The tide rips in Unalga Pass accompanying a flood current are most pronounced NE of Erskine Point. With an ebb current the most pronounced tide rips occur off Brundage Head. During the periods of tropic tides, however, tide rips may occur throughout the length of the pass. Small boats can avoid the tide rips by keeping close to the Unalga Island shore.

(24) Treacherous seas caused by wind or ocean swell opposing the current may be encountered in the narrow part of Unalga Pass. When tide rips are heaviest in Akutan and Unalga Passes, the water is broken into heavy choppy seas which board a vessel and make it difficult to control the steering. Tide rips are dangerous for small vessels even if there is no wind or sea.

(25) Additional information on currents will be found elsewhere in the text under their respective localities.

(26) **Tides.**–General tide information in the Aleutian chain is contained in the Tide Tables.

(27) **Local magnetic disturbance.**–Differences have been found in many areas in the vicinity of the Aleutian Islands. On land, differences from normal variations of as much as 8° have been observed, with 3° and 4° rather common. Unusual disturbances have been observed on the NW coast of Tigalda Island E of Kelp Bay; on the S shore of Akun Bay; on Cape Aiak, Unalaska Island; in Nazan Bay, Atka Island; on Yunaska Island; and on Amutka Island.

(28) **Weather, Aleutian Islands.**–The weather of the Aleutians is characterized by persistently overcast skies, strong winds, and violent storms. It is often variable and quite local. Clear weather is seldom encountered over a large area. North shores are usually better off than South ones. The winter temperatures are moderated by the relatively warm waters of the Japan Current, so the islands are usually free from ice, which would hamper navigation. At Adak, overcast conditions average nearly 75% of the time during June and July, dropping back to approximately 50% of the time from October through February.

(29) Winds are variable, local, and often strong. From the Fox Islands to the Andreanof Islands, SW through NW winds are the most common except in midwinter, when winds from all directions are frequent. There are numerous local variations to this general flow. On Unimak Island, southeasterlies are common in midwinter. Southeasterlies are also prevalent on the N side of Unalaska Island from November through February. At Atka, NW winds are frequent year round. Williwaws and intense lows bring gales from October through March. Winds have climbed to 65 knots at Dutch Harbor, and to 74 knots on Umnak Island. A peak gust of 109 knots occurred at Adak in March 1954. Gails occur in all months of the year at Adak with the greatest chance from December through March.

(30) In the W Aleutians over the Rat and Near Islands, winds are also strong and variable. From about April through November, south through NW winds are common, while N through SE winds blow frequently in winter. Williwaws can be violent; windspeeds reached 91 knots at Attu one February.

(31) In the Aleutians, about 30 to 75 inches (762 to 1905 mm) of precipitation occurs on 200 to more than 300 days. This means there are a lot of days with snow and drizzle. For example, at Adak, there is an average of 341 days with measurable precipitation, and better than 72 percent of those see 0.1 inch (2.54 mm) or more measured. Winter is the wettest season and November, the wettest month. Adak averages over 61 inches (1549 mm) of precipitation a year with the extremes of nearly 93 inches (2362 mm) in 1954 and 37.37 inches (949.2) in 1960. In general, precipitation increases W along the chain, but exposure can have some influence on larger islands. Snow is a frequent form of precipitation from November through April, when 30 to 100 inches (762 to 2540 mm) fall on 10 to 25 days per month. The average annual snowfall for Adak is 95 inches (2413 mm). The snowiest month is January and every month of the year has seen snowfall except July.

(32) Temperatures are mild, and their range is small. In the coldest part of the winter, usually January, average daily maximums range from the mid-to upper thirties (°F, 1° to 3°C), while minimums fall to the 25° - 30°F (-4° to -1°C) range. Occasionally a cold air outbreak will drop temperatures into the teens (-11° to -7°C). Extreme low temperatures range from about 8° to 15°F (about -13° to -9°C). This is considerably warmer than along the Alaska Peninsula, where extremes drop well below 0°F (<-18°C). Temperatures begin to moderate after February. July and August are usually the warmest months. Daytime highs from 55° to 60°F (13° to 16°C) are common, while at night temperatures usually fall about 10°F (6°C) to the 45° to 50°F (7° to 10°C) range. Extreme high temperatures range from about 65° to 75°F (18° to 24°C); a few places have had a high of 80°F (26.7°C).

(33) The extreme maximum temperature at Adak is 75°F (23.9°C) recorded in August 1956 while the extreme minimum temperature is 3°F (-16.1°C) recorded in January 1963 and February 1964. The average annual temperature is 40.8°F (4.9°C). August is the warmest month with average extremes of 56°F (13.3°C) and 46.6°F (8.1°C) and February is the coldest month with average extremes of 36.9°F (2.7°C) and 28.4°F (-2°C). Due to the major maritime influence, no month has an average temperature span greater than 10°F (5.6°C).

(34) The poorest visibilities in the Alaska area occur along the Aleutians. They are best in winter, although even then they can be hampered by fog, snow, and rain. In summer when warm air from the Pacific moves over relatively cooler waters near the Aleutians, extensive fog formation takes place. Often the sun's heat has little effect in dissipating this fog, and it takes a change in air flow to clear the region. This advection or sea fog forms most often from June through September. At its peak in July and August, it can reduce visibilities to below two miles on 10 to 20 days per

month throughout the chain. It is most likely to affect the S shores, although quite often it blankets the entire region. In winter, land fog is more local and can be expected, along with snow and rain, to drop visibilities to less than 2 miles on 1 to 4 days per month.

(35) Adak averages 173 days per year with fog. The foggiest months are July and August when an average of 26 of the 31 days have fog. This number drops dramatically toward the winter season where the months of December through March have, on average, fewer than ten days with fog during any one month.

(36) The **Aleutian Trench** begins off Cape St. Elias in the Gulf of Alaska and parallels the Alaska Peninsula and the Aleutian Islands for more than 2,200 miles. The axis of the trench is 60 to 90 miles S of the Aleutians, and depths range from 2,400 fathoms in the E part to more than 4,000 fathoms in the W part.

(37) **Chart 16520.–Unimak Island,** the first of the Aleutian Island chain, is separated from the end of the Alaska Peninsula by narrow Isanotski Strait (also called False Pass). This pass is practically closed by shoals at its entrance from the Bering Sea. Unimak Island is about 50 miles long and 23 miles wide; it is extremely mountainous, bare of trees and generally grass covered.

(38) Unimak Island is one of the group known as the **Fox Islands,** the others being Unalaska and Umnak and their associated islands. The Krenitzin Islands, a part of the Fox Islands group, are between Unimak and Unalaska Islands. All these islands are bare of trees and are generally grass covered. They are frequented by many birds, and immense flocks are frequently encountered in the vicinity.

(39) The higher peaks on Unimak Island are excellent landmarks if they can be seen, but in summer they are usually obscured by fogs or low-lying clouds. The lower hills and islands and objects near the sea level are generally the only landmarks available.

(40) **Shishaldin Volcano,** 9,372 feet high, near the center of Unimak Island, is cone shaped and very regular in outline, with faint wreaths of smoke and vapor drifting at times from its summit. It is for the most part snowclad, except where the rocky cliffs and projections afford no lodgment.

(41) **Isanotski Peaks** are E of Shishaldin. They are rugged and have a broken or castellated double summit, the highest point rising to 8,135 feet. The summit is bare and looks as though it were composed of great vertical rock masses. This mountain is known locally as **Ragged Jack.**

(42) **Roundtop Mountain** is a rounded summit 6,140 feet high, surrounded by snowfields.

(43) **Pogromni Volcano,** about 9 miles from the W end of Unimak Island, is 6,568 feet high and is a snowclad, conical peak with vertical ridges cropping through the snow. Pogromni is a guiding landmark in clear weather for making Unimak Pass both from S and from the Bering Sea.

(44) The S coast of Unimak Island has cliffs in places, with lower land and sand beaches, between, and is backed by the high mountain masses of the central part of the island. The coast is fairly regular, with no indentations of any extent, and there are no harbors nor sheltered anchorages W of Ikatan Peninsula. The coast is exposed to the ocean swell and there is generally a heavy surf, which makes landing dangerous. The 10-fathom curve is less than 0.8 mile from the beach in most places, and there are no known outlying dangers.

(45) **Chart 16535.–Cape Lazaref,** about 800 feet high, on the S coast of Unimak Island, is the southwesternmost of three high cliffs, with sand beaches between them. The NE cliff of the series is at **Cape Aksit.** From the sharp point of the cape, **Lazaref Reef** extends 1 mile S. On this reef are **North Pinnacle Rock** and **South Pinnacle Rock,** about 100 feet high. Anchorage, with fairly good protection from W winds, can be had NE of this reef, about 0.5 mile S of a group of rocks that are about 0.4 mile off the E side of the cape, in 10 fathoms, sandy bottom. **Rock Island,** small and 112 feet high, is 1.5 miles W from the cape and 0.4 mile from the beach. In February 1984, the NOAA Ship MILLER FREEMAN reported finding anchorage with excellent protection from a N storm close to shore between Cape Lazaref and Rock Island. Outside this protected zone, winds of 50 to 60 knots were encountered.

(46) **Chart 16520.**–From Cape Lazaref the coast trends W, curving gradually W and S, for about 30 miles to form **Unimak Bight,** broad and open, and having a sandy beach. This sand beach is broken by a lava bed 8.5 miles W of Cape Lazaref, and by three conical hills, the southernmost formed into several columns and reaching the water to make a small projection, **Cape Rukavitsie,** 15 miles W of Cape Lazaref.

(47) At the S end of the sand beach is a broad valley; the S point is a sharp steep-sided projection, about 350 feet high, which forms **Promontory Cove,** small, and open to N. The cove is reported to afford anchorage with protection from S winds but not from the swell. The bottom is sandy, and shoaling toward the beach is gradual.

(48) **Cape Lutke,** the SW headland of Unimak Bight, is a cliff 610 feet high, joined by a lower ridge to the higher land farther back. At this point the coast changes direction to SW and then W for 13 miles to Seal Cape.

(49) **Seal Cape,** on the N side of Unimak Pass in entering from the Pacific, is not particularly noticeable, but the locality is well marked by Arch Point, Promontory Hill, and Scotch Cap. The coast is bold and can be approached close enough (0.3 to 0.5 mile) in moderately thick weather to be seen and followed.

(50) **Arch Point,** 3 miles NE of Seal Cape, is a rocky projection 172 feet high with an arch through the point near its extremity. The arch is visible only from onshore or close to shore. A small sand beach on the W side of Arch Point is well protected from any weather, except from the S, by the point itself and by a projecting ledge. The heavy surf, which generally prevails along most of this coast, is reported to be absent on this beach. Small boats could probably land here in an emergency.

(51) **Promontory Hill,** 5 miles NE from Seal Cape, is a short ridge, about 1,100 feet high, having a NW and SE direction, and detached from the interior high land. Its outlines are smoothly rounded and it has a slight saddle, the whole having a bare, brown, appearance. It is isolated and prominent, and together with Scotch Cap is a good landmark for the E entrance to Unimak Pass. Approaching Unimak Pass from the E and SE, Promontory Hill can often be seen when other landmarks are fog covered.

(52) From Seal Cape around to Cape Sarichef, a distance of 19 miles, the coast of Unimak Island has a number of projecting points, is low in appearance, and slopes gradually upward to the high land of the island. Between Seal Cape and Sennett Point, the 10-fathom curve is from 0.3 to 0.7 mile offshore. The 20-fathom curve is close inshore in places and is irregular. A study of the chart will show that great care is required in navigating on

soundings alone around the W end of Unimak Island which is a region of strong currents. There are no dangers if the coast is given a berth of 0.5 mile.

(53) Along this part of the coast there are several prominent hills. **Red Hill,** a very distinctive formation, is near Cape Sarichef. This isolated hill, 798 feet high, is closer to the shore than the other peaks in the vicinity and is easily recognized by its reddish hue. It is prominent from the N, NE, and W, and is often clear when higher peaks are obscured by fog or clouds.

(54) **Scotch Cap,** 420 feet high, is a precipitous cliff of rock that extends along the beach nearly 1 mile. Back of the cliff the land slopes downward for nearly 1 mile, then rises uniformly to the higher land of the island. Scotch Cap can be seen many miles in clear weather and is unmistakable.

(55) **Scotch Cap Pinnacle,** a rock 172 feet high, is 50 yards seaward from the cliff.

(56) **Scotch Cap Light** (54°23.7'N., 164°44.7'W.), 110 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark about 1.8 miles ESE of Scotch Cap.

(57) **Sennett Point,** midway between Scotch Cap and Cape Sarichef, is a low, flat, grass-covered bluff with a bold rocky coastline. Many detached rocks are near the surf-worn ledges that extend offshore from the base of the bluff.

(58) About 1 mile N of Sennett Point a reef makes out 0.2 mile from shore; the rocks at the outer end of the reef are 3 feet high. The bight between the reef and Sennett Point offers the best shelter and has the best holding ground in this locality. Anchorage inside the 10-fathom curve is usually free from current, no matter how strong it may be running in Unimak Pass. In 1938 a survey ship rode out several SE gales at this anchorage.

(59) A good landing is just N of Sennett Point. It is a small protected beach between the rocky ledges of the point and a group of inshore rocks, the highest is 13 feet. In S weather, this is the best small-boat landing on the W coast of Unimak Island. Mail and supplies for both Scotch Cap and Cape Sarichef Lights are landed on this beach when landings cannot be made at either light. A small cabin on the shore is kept in repair by the U.S. Coast Guard, and is equipped with stove fuel and a few necessary supplies. In N weather landings are made in the bight S of Sennett Point.

(60) About 2 miles S of Cape Sarichef Light is a small, rocky beach, which is well protected by rocks and ledges and could be used as an emergency landing in rough weather. The beach is at the S edge of the black lava flow from a prominent, extinct volcano, 1,240 feet high and 3 miles inland.

(61) **Cape Sarichef** is a steep, grassy bluff about 175 feet high; back of it is a tableland, then a gradual slope upward to Pogromni Volcano. The black lava flow extends N along the coast to within 0.5 mile of the light. At **Sealion Point,** 1.5 miles S of the light, is a flat rock, 35 feet high, which is prominent from seaward.

(62) A shoal area extends W from Cape Sarichef for about 3 miles. Depths on the shoal are 7½ to 15 fathoms; the bottom is mainly gravel, with some rocky patches. The shoal appears to be a submerged extension of the lava flow on the coast. Ships should avoid crossing it because of the heavy tide rips, overfalls, and eddies; the current reaches a velocity of 4 to 6 knots. During favorable weather and sea, passage may be made inside the rocky patches by following the shore at a distance of 0.5 mile.

(63) **Cape Sarichef Light** (54°35.9'N., 164°55.8'W.), 170 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the W end of Unimak Island. Several large buildings are near the light. In very smooth weather, boats can land in the small cove directly below the light.

(64) **Unimak Pass** is the first ship passage SW of the Alaska Peninsula into the Bering Sea. It is about 10 miles wide between the SW end of Unimak Island and Ugamak Island, which is one of the smaller islands of the Krenitzin Group.

(65) Unimak Pass is the widest of the Fox Islands Passes and the most generally used by deep-draft vessels. Unalga and Akutan Passes, 50 miles farther to the W, are convenient under certain conditions if bound for Dutch Harbor, but Unimak Pass is the only one of the three that is lighted.

(66) Besides being a gateway to the Bering Sea, Unimak Pass is also used by some vessels to effect a shorter and better weather route across the North Pacific Ocean. The route W via the Bering Sea avoids the prevailing head winds and heavy seas that are encountered S of the Aleutians.

(67) Unimak Pass is free from outlying dangers, but the currents and prevailing thick weather make it necessary to exercise unusual care in approaching the pass, especially from S. The Krenitzin Islands furnish considerable protection from S and SW weather, but during E or N weather the seas in Unimak Pass are accentuated by the current. A northeaster will also augment the prevailing SW current along the Alaska Peninsula. (See the Tidal Current Tables for current predictions for Unimak Pass.)

(68) SE of Unimak Pass is **Davidson Bank,** on which the depths vary between 35 and 50 fathoms; the seaward edge of the bank drops off sharply into deep water. At times there is a marked change in the color of the water from blue to green when coming from deep water onto the bank. The current runs W with an average velocity of about 0.2 knot; with an E wind it reaches a velocity of more than 1 knot along the 100-fathom curve. Tide rips are of frequent occurrence.

(69) A vessel should be sure of its position before attempting to enter Unimak Pass, and in thick weather should not attempt the other passes.

(70) Vessels should approach Unimak Pass through the prescribed **Unimak Pass Shipping Safety Fairway**. The Unimak Pass Safety Fairway is composed of an E-W fairway with a connecting N-S fairway in the W section. (See **166.100 through 166.110 and 166.400**, chapter 2, for limits and regulations.)

(71) Approaching Unimak Pass from the E, care must be taken to avoid Sanak Reef and Aleks Rock. A good rule is to stay on, or S of 54°N. and make 163°W., while still outside the 100-fathom curve; then stand WNW across Davidson Bank for a position about 3 miles S of Scotch Cap Light.

(72) If the weather is very clear, the mountains of Unimak Island can be seen and recognized, but under ordinary conditions the first land sighted will be Promontory Hill, Ugamak Island, or Tigalda Island. From a distance Tigalda Island will appear as a number of small islands, but closer to, it is one island with six distinct peaks or short ridges. Some navigators prefer to stand W on 54°N. beyond 164°W. so as to sight Tigalda or Ugamak Islands; these islands often show when Unimak Island is fogged in.

(73) The comparatively low land in the depression on the middle part of Avatanak Island is often clear when no other land is showing, especially in N weather. The grotesque irregularities of the topography make it easy to identify the locality. If approaching from the S, this stretch probably offers the best chance for identification of surroundings, especially since it is easy of approach and comparatively free from current.

(74) **Chart 16531.–Ugamak Island,** marked by a light on its N side, is the easternmost of the **Krenitzin Islands,** which extend from Unimak Pass to Akutan Pass. The island has a sharp peak, 1,042 feet high, at the E end; when viewed from the SE, several pinnacles protrude from the side of this peak, giving it an extremely rugged appearance. Near the middle of the island is a knob 905 feet high. The island is mainly tundra covered. The shore is backed by bluffs 50 to 1,000 feet high. Off the SE point of the island is a conical pinnacle, 310 feet high, which is separated from the island by a narrow gorge 10 to 15 yards wide. About 0.3 mile off the SE end are two rocks awash, generally marked by breakers. Twin grassy islets, the N of which is 127 feet high, are 0.6 mile S of the E point of **Ugamak Bay,** a cove on the S side of Ugamak Island. The islets are separated by a deep gorge and appear as one; the collective name of **Round Island** is applied to them.

(75) Strong currents sweep around the E end of Ugamak Island and heavy tide rips occur. It is advisable to give this end of the island a berth of about 2 miles.

(76) The E end of Ugamak Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around this rookery which encompasses the entire island and the islands and islets within the 3-mile limit. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(77) **Local magnetic disturbance.**–Differences of as much as 5° from the normal variation have been observed on Tigalda Island and as much as 3° between Akutan and Rootok Islands.

(78) **Aiktak Island,** 556 feet high, is S of the W part of Ugamak Island; the two islands are separated by a pass 0.5 mile wide and 6 to 10 fathoms deep. Small vessels use this pass for temporary anchorage, but moderately strong currents make the anchorage unfavorable. On the S side of Aiktak Island are sheer bluffs, the tops of which approach the highest parts of the island. The islet off the NE end is grass covered and less than 100 feet high.

(79) Temporary anchorage in N weather may be found in Ugamak Bay in 16 fathoms about 0.5 mile from shore. In S weather, some shelter may be found on the N side of Ugamak Island in a small bight 1.5 miles on the E end; depths are 16 to 20 fathoms, 0.3 mile from shore.

(80) **Ugamak Strait** has a width of 3 miles between Ugamak and Aiktak Islands on the N and Kaligagan Island on the S. A detached shoal, covered 10 fathoms, is in the middle of the NW entrance to the strait. Heavy rips and swirls occur in this area at certain stages of the tide. Passage of Ugamak Strait has been made on a **288°** course, heading approximately for Billings Head on Akun Island; this course passes about 1.3 miles N of the northernmost rock off Tigalda Island. Allowance must be made for the current which sets across this course. The velocity of the current is 3.8 knots; velocities greater than 6 knots have been observed. (See the Tidal Current Tables for current predictions for Ugamak Strait.)

(81) **Tigalda Island,** on the S side of Ugamak Strait, is 11 miles long in an E-W direction and 3 miles wide. It has six mountain ridges, 1,000 to 1,600 feet high, which trend NW and are separated by low valleys. The W end of the island is comparatively low. Grass and tundra cover the island.

(82) **Kaligagan Island,** in Ugamak Strait, 0.8 mile off the NE end of Tigalda Island, is 0.8 mile long and 478 feet high. A large number of bare rocks or islets extend 2.5 miles W and NW of Kaligagan Island. The northernmost is the highest (63 feet) and is about 1.8 miles N of the Tigalda Island shore. Passages between groups of these rocks are deep and safe for small craft.

(83) Proceeding to Tigalda Bay from among the islets, care should be taken to avoid a group of rocks awash that extend 270 yards off the N side of the entrance point of the bay. These rocks are marked by thick kelp. Currents in the passage between Kaligagan and Tigalda Islands are approximately as strong as in the main passage of Ugamak Strait and currents are present among the groups of islets.

(84) **Tigalda Bay,** on the N side of Tigalda Island, 3 miles from its E end, is sheltered from all except NW winds. The bay is about 0.6 mile wide and 1.5 miles long in an E-W direction, and has depths of 8 to 10 fathoms, rocky bottom. Because of the poor holding bottom, the anchorage is not secure in strong winds. An anchorage off the entrance to the bay in 12 to 15 fathoms, gravel bottom, is preferred, and furnishes just as good shelter in S and E weather. The diurnal range of tide is 3.3 feet.

(85) The small bay just E of Tigalda Bay is not recommended as an anchorage for small craft because the swell making in from the N or W is not broken up by the group of islets.

(86) **Welcome Bay,** just W of Tigalda Bay, is an open bay 0.8 mile wide. At the head, a narrow passage leads to a lagoon largely bare at extreme low water. The passage at its narrowest part is 90 yards wide and 2½ fathoms deep. The bay anchorage is in 15 fathoms, sand and gravel bottom, 0.4 mile from shore. An anchorage for small craft is in 4 to 6 fathoms, sand bottom, at the entrance to the passage.

(87) **Kelp Bay,** on the N side of Tigalda Island and 2 miles from the W end, provides temporary anchorage in S weather. The entrance is constricted by a reef that extends 0.3 mile from the W entrance point. The point to the E of the bay is marked by several off-lying rocks, the outermost showing 9 feet. Because of a shoal area that extends 0.8 mile N of the point, large vessels should pass at a distance of not less than 1 mile. Anchorage is found in the center of Kelp Bay in 7 to 10 fathoms just inside the entrance.

(88) A small bay 2 miles E of Kelp Bay provides anchorage for small craft in S weather. Care should be taken to avoid covered rocks 170 yards off the E entrance point and others 150 yards offshore on the W side. Anchorage in 7 fathoms is found 0.3 mile from the head of the bay.

(89) At the W end of the S shore of Tigalda Island is a pinnacle rock, 165 feet high, and about 100 yards offshore, that shows prominently in a SE and NW direction. The point about 3 miles E of the W end is marked by **Derbin Island,** about 0.4 mile long and 206 feet high, lying close to the shore. E of this point the S shore of Tigalda Island consists of high cliffs intersected by low valleys. About 2.5 miles E of Derbin Island are two round bare rocks, 85 and 27 feet high, about 0.4 mile from the shore. The section of the coast abreast of the rocks is a steep rocky bluff rising to a 1,682-foot peak. About 2.5 miles E of the two rounded rocks is a 191-foot pinnacle near the shore. An arch through the pinnacle rock gives it the appearance of a huge chair.

(90) **Derbin Bay,** the bight E of Derbin Island, provides temporary anchorage in N weather. The recommended anchorage is in 16 to 18 fathoms, 0.5 mile from shore and 0.8 mile from Derbin Island. The E shore of the bight is foul, with a covered rock 300 yards SW of a 134-foot rocky islet. Small craft should favor the W shore of the bight in running to anchorage in 7 to 10 fathoms, 0.4 mile from the head of the bight.

(91) A small indentation, 0.3 mile long and 0.1 mile wide, is 1 mile SW of the E extremity of Tigalda Island. Rocky bottom and

rocks awash along the shores make this anchorage acceptable only in case of an emergency. The depths range from 5 to 7 fathoms. A low pass extends in a NW direction across the island to Tigalda Bay.

(92) **Derbin Strait,** separating Tigalda and Avatanak Islands, is a little over 1 mile wide. No known dangers are more than 0.3 mile from shore. A safe course through the strait is **326°** in midchannel, with Billings Head of Akun Island ahead. On the E side of the S entrance is Derbin Island; on the W side is a bare rock, 30 feet high and 400 yards off Avatanak Island.

(93) A reef awash at half tide extends 330 yards W from the 165-foot pinnacle rock about midway on the E side of Derbin Strait. On the W side of the N entrance is a bare rock 2 feet high, 400 yards off the NE point of Avatanak Island.

(94) Tidal currents in Derbin Strait average about 5.5 knots, although velocities of almost 8 knots have been observed. The flood sets NW and the ebb SE. In midchannel, with wind and current opposing, the strait becomes exceedingly rough. A swell from SW to SE makes into the strait and is accentuated by the current. There are numerous eddies and cross currents near the shore. The ebb current causes tide rips a considerable distance offshore, especially on spring tides. Small boats should avoid Derbin Strait except under favorable conditions. (See the Tidal Current Tables for current predictions for Derbin Strait.)

(95) **Avatanak Island** is 9 miles long and 3 miles wide at its E end, but the W half of the island averages less than 0.8 mile in width. The middle of the island is a depression less than 100 feet high, the sides of which slope gently upward to 1,635 and 1,276 feet on the E and W ends, respectively. The low land of the depression is often clear when no other land is showing especially in N weather. There are many grotesque irregularities in the topography.

(96) **Avatanak Point,** the S end of the island, is sharp and bold and has a ragged chain of rocks and rocks awash that extend over 0.3 mile in a S direction. The southernmost of these is a symmetrical oval rock 6 feet high.

(97) In 1981, the NOAA Ship MILLER FREEMAN anchored in the center of the bight E of Avatanak Point in a 35-knot NNW wind; good holding ground was in 15 to 16 fathoms, sand bottom.

(98) Two pinnacle rocks are W of the W extremity of the island; the highest and outermost is 200 yards offshore and 60 feet high.

(99) Near the center of the island on the S side is **Chimney Cove,** which affords temporary protection to small craft from N weather. It is exposed to the ocean swell. The cove is marked by a vertical chimney-shaped slab of rock, over 200 feet high, which projects from the ground surface on the W point of the cove. The rock also shows in Avatanak Strait over the low-lying middle ground. Larger vessels may find temporary anchorage in 15 to 20 fathoms S of this rock, well clear of any currents.

(100) **Rootok Strait,** separating Avatanak Island from Rootok Island, is a little more than 1 mile wide, but the clear channel is reduced to about 0.5 mile by a reef that extends from the E side and by rocks that extend from the W side. The reef, composed of separate rocks and heavily fringed with kelp, is bare at various stages of the tide, and extends 525 yards in a SW direction from the highest of the two pinnacle rocks off the W extremity of Avatanak Island. The rocks on the W side extend 250 yards from the Rootok Island shore. Depths less than 10 fathoms extend almost 0.5 mile N and NE from the NE point of Rootok Island.

(101) A detached shoal covered 3½ fathoms is near the middle of the S entrance, about 1 mile NE of the E end of Rootok Island.

(102) A flat-topped rock about 20 feet high is just off the E end of Rootok Island and other rocks extend 400 yards from the rock into the strait.

(103) In the bight indenting the E shore of Rootok Island, a rock awash at low tides is about 500 yards from the shore. Several pinnacle rocks fringe the S shore of this bight.

(104) To make the passage through Rootok Strait, steer **298°** for the N end of Rootok Island, leaving the E end of the island 0.6 mile to port; when the W end of Avatanak Island is abeam, change course to **331°** and pass in midchannel between the bare rocks off Avatanak Island and those close to the N end of Rootok Island.

(105) The currents in Rootok Strait have an estimated maximum velocity of 4 knots. Tide rips and whirls occur off the N entrance, but, as this area is sheltered from winds from most directions, they are mild compared to the rips that occur in other passes.

(106) **Rootok Island,** the westernmost island on the S side of Avatanak Strait, is 3 miles by 2.2 miles in extent. The island's most prominent features are the twin peaks, 1,545 and 1,532 feet high and 600 yards apart in an E-W direction. The S side of the island is a continuous cliff broken only by a small valley slightly E of the twin peaks. A flat-topped rock about 20 feet high is off the E point of Rootok Island. The island is fringed with rocks and kelp and affords no secure anchorage. It is used as a fox farm, the buildings being in the S valley of the bight on the E side.

(107) **Akun Island,** 23 miles SW of Unimak Island, is the northernmost island of the Krenitzin Group. It is about 12 miles long, and very irregular in shape, being nearly divided by Akun Bay and Lost Harbor and a low depression joining them. The island is high and rugged, particularly its N part, which reaches an elevation of 2,620 feet at **Mount Gilbert,** an extinct crater on the N side of Lost Harbor.

(108) **Avatanak Strait** is a broad passage separating Avatanak and Rootok Islands from Akun Island. The strait has a general NE-SW direction and is 3 miles wide at its narrowest part. There are no hidden dangers over 0.3 mile from shore and navigation is not difficult in clear weather. It is reported that strong NW winds draw heavily through Akun Strait into the W end of Avatanak Strait.

(109) Currents with a velocity of 6.5 knots have been observed in Avatanak Strait; but average strengths of flood and ebb are about 4 knots and 3.5 knots, respectively. The ebb sets to the W, and the strength of the current is felt well to the W of Rootok Island; but to the E of the strait along the N side of Tigalda Island the currents are weak. (See the Tidal Current Tables for predictions for Avatanak Strait.)

(110) Tide rips and swirls occur in the narrowest part, off the entrance to Akun Strait, and among the islands off the S shore of Akun Island. A pronounced set is often experienced when crossing the narrow depression abreast of Derbin Strait, and light tide rips occur there.

(111) **Basalt Rock,** in Avatanak Strait and 1 mile N of Avatanak Island, is a symmetrically rounded rock 50 feet high; it is steep-to and the channel inside is clear, with depths of 10 to 20 fathoms.

(112) **Jackass Point,** the S extremity of Akun Island, terminates in a chain of irregularly shaped rocky islets, the highest of which is 80 feet. Tall and conspicuous **Pinnacle Rock,** 145 feet high, is 0.5 mile W of Jackass Point and 0.3 mile offshore.

(113) **Easy Cove,** at the S end of Akun Island, is 0.4 mile wide with about the same distance to its head. Small vessels may find temporary shelter from N winds in 8 to 10 fathoms.

(114) **Poa Island,** about 2.5 miles NE of Jackass Point, is steep sided, about 0.6 mile long in an E-W direction, and 305 feet high.

(115) **Tangik Island,** about 1 mile NE of Poa Island, is about 0.4 mile long and 225 feet high at its E end. It is surrounded by rocks, and a reef extends about 350 yards SW from its SW end. The channel between Tangik and Poa Islands is clear except for reefs close to the S side of Tangik Island, which should be given a berth of at least 0.3 mile.

(116) **Trident Bay,** W of Tangik and Poa Islands, is about 0.8 mile wide and 1 mile long. The entrance is constricted to less than 0.5 mile by an islet, 82 feet high, on the N side and a chain of rocks, terminating in a flat-topped rock 32 feet high, on the S side. Three small coves indent the shore at the head of the bay. A rock awash at low water is about 225 yards off the point between the middle and S coves. The heads of the coves are shoal.

(117) Anchorage can be found in the middle of Trident Bay in 20 fathoms, with good protection from all directions but the SE; however, the islands off the entrance provide some protection from this direction. With a SW swell, small boats find better protection at the entrance to the W cove in 2 to 6 fathoms. The survey ship found this bay the best sheltered in the vicinity, and had sufficient swinging room.

(118) To enter Trident Bay from S, steer **350°,** heading for the W tangent of the islet at the N entrance point. Pass midway between Pao Island and the land to the W. When the outermost flat-topped rock is abeam to port, swing sharply to **300°,** heading for the sand beach in the middle cove with the S tangent of Poa Island directly astern. In making this turn, favor the flat-topped rock which is steep-to, as the currents eddying around the entrance to the bay have a tendency to keep the ship's head from coming around. A bank of 8 fathoms extends across the entrance channel.

(119) **Cross Bay** is an indentation about 1 mile wide on the SE side of Akun Island and to the N of Tangik Island. Rocks extend about 300 yards off its middle point. The channel N of Tangik Island is clear, but the channel W of the island with 4 fathoms or less should be avoided.

(120) **Round Head,** the SE point of the peninsula that extends E from Akun Island, is a rounded steep-sided headland 465 feet high; a pinnacle 52 feet high is 200 yards off the point. From Round Head the shore of Akun Island trends W for 3 miles and is less rugged. It then turns to the S for 1.5 miles to **Cross Point** forming an indentation known as **Seredka Bay.** Anchorage with good shelter from N and W winds can be found in 10 to 20 fathoms about 0.4 mile from the shore. The NE side of Cross Point is fringed with rocks and kelp.

(121) **Tanginak Island,** of small extent but 270 feet high, is 2.2 miles off the E end of Akun Island. Although it appears to be one rounded island, it is in reality two islets separated by a narrow passage. The passage between Tanginak and Akun Islands is deep, but strong currents sweep through it, accompanied by tide rips and swirls.

(122) About 4.8 miles N of Tanginak Island and in the approach to Akun Bay is **Fathometer Reef,** a 3¼-fathom rocky shoal, which is about 0.3 mile in diameter and is surrounded by depths of over 30 fathoms. Heavy tide rips and swirls occur in the vicinity except at slack water. Vessels should keep well clear of the reef, as no kelp has been reported on it and breakers may not be distinguishable from the tide rips.

(123) **Akun Bay** is the broad indentation in the NE side of Akun Island; it affords anchorage at its head except with winds from the SE to NW, but heavy williwaws are experienced with offshore winds. There are no known dangers in the bay except close to shore. At its head, where the bay is 2.5 miles wide, there are two large bights; the N bight is known as **Helianthus Cove.** Anchorage may be made in either of the bights, about 0.5 mile from shore, in 10 to 15 fathoms. Small vessels can find fairly good shelter from all directions in the S part of Helianthus Cove. Both bights have freshwater lakes at the head; the lakes are about 10 feet above high water. A very low depression extends across the island from Helianthus Cove to Lost Harbor.

(124) A long peninsula extends E from the middle of Akun Island; off the N point at the outer end of the peninsula is a twin pinnacle, 230 feet high, which marks the SE limit of Akun Bay. A gully indents the cliffs at the most E point of the peninsula.

(125) The N ends of Akun Island are **Billings Head** and **Akun Head,** 4 miles to the W. These massive heads, separated by Little Bay, both have precipitous faces. Akun Head has a flat top 1,645 feet high. The bluffs on its N and W sides are marked by rust-colored stratification. Billings Head rises to 1,660 feet.

(126) **Billings Head Bight,** on the N side of Billings Head, is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the rookery which encompasses Akun Head, Little Bay, Billings Head, and the N portion of Akun Bay. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(127) **Billings Head Light** (54°17.8'N., 165°31.4'W.), 210 feet above the water, is shown from a small house with a red and white diamond-shaped daymark on the N side of the head.

(128) **Little Bay** indents the N end of Akun Island. A spit makes out from the W shore. The area S of the spit is closed by a rocky bar and only boats drawing a few feet can enter. Anchorage outside of the spit may be had in 8 to 10 fathoms, sandy bottom.

(129) **Chart 16532.–Akun Strait,** between Akun and Akutan Islands, is about 1 mile at its narrowest part, but the navigable channel is reduced to 400 yards by reefs that extend from the E shore and by Race Rocks on the W. Race Rocks, a flat rocky islet 25 feet high and some smaller bare rocks, are near the N end of the strait and 0.3 mile from its W shore. **Akun Strait Light** (54°07.9'N., 165°39.6'W.), 46 feet above the water, is shown from a skeleton tower on Race Rocks.

(130) Shoal water and heavy kelp surround Race Rocks for a distance of about 250 yards; **Swirl Rock,** awash at half tide, is 250 yards N of the light and is conspicuous by the heavy overfall and swirls. The main channel is to the E and N of Race Rocks and Swirl Rock and has a least depth of 4½ fathoms. The channel to the W of Race Rocks has a least depth of 2 fathoms and is subject to currents which are just as strong as in the main channel.

(131) With NW winds in the summer, a bank of fog frequently streaks through Akun Strait, but under such circumstances, vessels navigating Avatanak Pass will usually sight the S shore of Akutan Island.

(132) Currents in Akun Strait attain an estimated velocity of 12 knots in the narrowest part, setting N with the flood. The slack period is very short. Tide rips, swirls, and overfalls occur, and with a N wind or swell are extremely heavy. By skirting the kelp off Race Rocks and passing within 100 yards to the N of Swirl

Rock, local vessels are able to keep out of the strength of the current.

(133) **Green Bight,** indenting the SE shore of Akutan Island at the entrance to Akun Strait, offers temporary anchorage in 6 to 8 fathoms 0.4 mile from shore. It is convenient while waiting for slack water to pass through the strait.

(134) The W or Akutan Island shore of Akun Strait is low, except in the middle where a rounded peak 650 feet high forms a steep cliff on the N point of Green Bight. Shoal water marked by heavy kelp extends about 500 yards E from this point.

(135) From this low point with an arch, 1.6 miles W from Jackass Point, the E shore of Akun Strait extends NW for about 2 miles to a point with a flat grassy islet, 80 feet high, close by. Shoal water marked by heavy kelp fringes this shore. A rounded rock, 10 feet high, is 650 yards NW from the arch. A group of rocks, bare at low water, are about 500 yards NW of the rounded rock and about the same distance off the E shore of the strait.

(136) The W end of the flat grassy islet can be approached to within 250 yards on the W, but shoal water marked by heavy kelp extends about 700 yards S. A flat islet, 200 feet high, is 0.4 mile N of the grassy islet; the passage between the two islets is obstructed and foul.

(137) **Akutan Bay** opens into the Bering Sea between Akun Head and North Head. This approach from the Bering Sea is used to reach Akutan Harbor and other arms of the bay. Akun Strait, previously described, connects Akutan Bay with Avatanak Strait and the Pacific, but it is comparatively shoal and contracted, and is not recommended.

(138) **Akutan Harbor** opens into Akutan Bay on the N side of the peninsula which juts into Akun Strait from Akutan Island; the preferred approach to the harbor is from N through Akutan Bay. The harbor is 4 miles long and from 0.5 to 1.8 miles wide. Except for crabpots, there are no known dangers over 300 yards from shore. From the head of the harbor, a trail leads inland to the hot springs.

(139) **Akutan Point,** on the N side of the entrance to Akutan Harbor, is a grassy hummock 175 feet high, which is connected with the island proper by a low grassy neck. A light is on the point.

(140) **Akutan** is on the N side of the harbor about 2 miles W from the E end of Akutan Point. Two wharves are at Akutan. On the opposite side of the harbor 1 mile farther W is a former whaling station with a wharf in disrepair. A processing ship is permanently moored alongside the wharf; the vessel is fastened to mooring buoys near the wharf. A concrete piling, covered at high water, is just off the wharf; this wharf is not recommended for mooring. There is a post office in Akutan. Unscheduled seaplane flights to other areas are about 3 times a week.

(141) A recommended anchorage is about 300 yards off the village in 22 fathoms. Vessels can also anchor in the broad bight in the S shore in 15 fathoms, with the E end of Akutan Point bearing 018°. The bottom at both anchorages is very sticky. The harbor is well sheltered from all except E winds, but heavy williwaws are encountered during gales.

(142) A cannery (54°07'55"N., 165°47'12"W.), about 0.5 mile W of Akutan, has a dock with 500 feet on the S face and 200 feet on the E and W faces. Fuel, water, electricity, and limited marine supplies are available. The cannery monitors VHF-FM Channel 6.

(143) **Pilotage, Akutan**.–Pilotages, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(144) The Aleutian Islands are served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(145) Vessels using Southwest Alaska Pilots Association pilots and en route to Akutan can meet the pilot boat about 1 mile E of Akutan Point (54°08.7'N., 165°43.6'W.).

(146) The pilot boat can be contacted by calling "AKUTAN PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(147) **Surf Bay,** on the Akun Island side of Akutan Bay and just N of Akun Strait, is an open bight exposed to the W and N. A group of rocky islets, the highest, 64 feet, is in the middle of the bay about 1 mile from shore. A group of rocks, awash at low water, is 0.3 mile N of the islets, and irregular bottom, with least depth of 2¼ fathoms, is found 0.3 mile NW of the rocks. The channel S of the islets is clear and anchorage can be found in 10 fathoms, 0.4 mile from shore, with good shelter in S and E weather. On the E side of Surf Bay is a sand beach about 1 mile long.

(148) **Lost Harbor,** 3 miles N of Surf Bay, affords fairly good shelter, although in NW weather considerable swell rolls in from Akutan Bay. The N side of the harbor has gently sloping sand bottom, with depths of 6 fathoms or more 0.4 mile from shore. A prominent stack and buildings mark the remains of a former sulphur mine on the N shore.

(149) In July 1990, numerous submerged obstructions were reported about 0.6 mile E of the stack in about 54°14'07"N., 165°36'39"W.

(150) **Sandy Cove** is a small bight about 3 miles NW of Akutan Point. Small craft can anchor in the center of the bay in about 5 fathoms, sandy bottom. The cove is exposed to the NE.

(151) **Hot Springs Bay** is a wide indentation in Akutan Island opening into Akutan Bay. The point on the NW side of the entrance is a high, rock cliff; **Ridge Point,** on the E side of the entrance, is a narrow ridge about 356 feet high, which has bare rock cliffs on its W side, but slopes rapidly on its E side into a grassy valley and sandy cove. At the head of the bay are three bights; a stream drains into the middle bight from the hot springs 0.5 mile inland.

(152) A rock, covered 2¼ fathoms, is 0.5 mile from the SE shore 1.5 miles inside Hot Springs Bay from Ridge Point. There are no other known dangers in the bay. Anchorage in S and W weather can be found in the W part of the bay 0.5 mile from shore, in 14 to 16 fathoms, sandy bottom.

(153) **Chart 16531.–Akutan Island,** largest of the Krenitzin Group, is about 9 miles NE from Unalaska Island and is separated from the latter by Akutan and Unalga Passes.

(154) The shore of Akutan Island bordering on Akutan Bay and Akun Strait is described in connection with those bodies of water.

(155) **Akutan Peak,** 4,244 feet high, rises about 600 feet on the S rim of a crater, about 1.2 miles in diameter, to form a sharp summit. It is the highest peak between Unimak and Unalaska Islands.

(156) **North Head,** the N end of Akutan Island, is a high bold cliff, with a large, deep grassy valley in the otherwise high shore on its E side. About 2 miles SW of the cape, a narrow, grassy valley separates the high ridge behind North Head from another high ridge; the W side of the valley is a bluff. **North Head Light** (54°13.3'N., 165°58.8'W.), 60 feet above the water, is shown

from a small house with a red and white diamond-shaped daymark on the point 1.5 miles W of the head.

(157) **Open Bight** is an indentation just E of North Head. No depths greater than 10 fathoms are found in the bight. It is exposed to N swell from the Bering Sea and is not recommended as an anchorage.

(158) A rock awash is about 250 yards off the rounded point just E of Open Bight; a covered rock is inshore from the rock awash.

(159) **Lava Point,** 6 miles SW of North Head, is a fairly flat lava bed varying in elevation from 150 feet along the shore to 300 feet at the base of the hill back of it. The cliffs all around the point are nearly vertical except in places where they are broken off. Numerous tunnels are under the cliffs. The NW face of the hill back of the point is concave and very steep.

(160) At the end of Lava Point is a flat rock having the same height as the point and slightly detached from it. In foggy weather low points will sometimes be seen below the fog, and the lava flow terminating in Lava Point often enables the navigator to identify this point. Due to the similarity of the headlands along these islands, this area is one where the navigator has unusual difficulty in identifying landmarks.

(161) **Lava Bight,** just S of Lava Point, provides temporary anchorage in S and E weather. On the S shore of the bight are several waterfalls, including a large one to the E of a group of small ones. The anchorage is in 12 to 15 fathoms, sandy bottom, 0.5 mile from shore, with the large waterfall bearing **160°.**

(162) A large circular reef is off the W coast of Akutan Island between Lava Bight and Reef Point; the outer edge of the reef is about 0.9 mile from the shore. The reef is marked by heavy kelp and is studded with numerous rocks which uncover 3 feet. The W part of North Head open at Lava Point is a good range to clear this reef in passing to the N of it. Between the reef and the shore is a passage which has a least depth of 2¾ fathoms and is clear of kelp; small boats use the passage to avoid the disturbed water outside.

(163) **Reef Bight,** on the S side of the reef, is not recommended for anchorage because of poor holding ground.

(164) **Reef Point,** the W extremity of Akutan Island, is steep and rocky and reaches a height of 500 feet. A low rock 150 yards off the point has the appearance of a stranded freighter when seen from the N or S.

(165) **Currents.**–Flood currents with an estimated velocity of 2 knots set along the W shore of Akutan Island as far N as Reef Point. Near Lava Point an ebb current of 1 knot has been observed. Off North Head, currents are weak. A N wind blowing against a flood current produces tide rips as far N as Lava Point.

(166) The S shore of Akutan Island between Green Bight and Sarana Bay is a steep rocky bluff with numerous boulders that extend about 200 yards offshore. A rectangular rock, 75 feet high, is 225 yards offshore, about 1 mile SW from the S end of Green Bight. Numerous waterfalls are visible along this shore in rainy weather.

(167) **Talus Point,** on the E side of the entrance to Sarana Bay, is the end of a rocky ridge, about 1,700 feet high, which has several massive pinnacles split from the top. It is more easily distinguished from offshore than Battery Point.

(168) **Sarana Bay,** between Talus Point and Battery Point, is 4 miles wide at its entrance, but narrows rapidly to an inner cove about 1 mile wide and 0.7 mile to its head. **Vulcan Point,** on the E side of the entrance to the inner cove, is marked by a flat-topped rock 45 feet high; a reef extends 450 yards SE from the rock. Anchorage in 5 to 10 fathoms can be found in the inner cove, but the shore should not be approached closer than about 450 yards. The bay is wide open to the S and in a S swell is very uncomfortable.

(169) **Battery Point,** the southernmost headland of Akutan Island, is marked by a peak with a distinctively shaped conical top resembling a liberty cap; it is faced by steep, high cliffs. Large vessels should give Battery Point a berth of 1.5 miles to avoid a 7-fathom shoal 1.3 miles offshore in a SE direction; swirls and tide rips mark the shoal. A 3¾-fathom shoal, marked by kelp, is 0.4 mile off the SE side of Battery Point, and a rock awash is 370 yards off the SW side.

(170) **Broad Bight** and **Cascade Bight** are the E and W bights, respectively, between Battery Point and Cape Morgan. This region can be used only for temporary anchorage in N weather. The heads of the two bights have beaches of sand and gravel and each is backed by a low, grassy valley. The bights are separated by a ridge terminating in a bold rocky headland with steep cliffs 800 feet high. Anchorage in Broad Bight can be found in 16 to 20 fathoms, sandy bottom, 0.8 mile from the beach and 1.1 miles 105° from the point of the headland; anchorage in Cascade Bight is in 14 to 16 fathoms, sandy bottom, 0.8 mile from the beach and 0.6 mile W of the same point.

(171) About 1.3 miles SW of Cascade Bight is a group of rocky islets; one of them, 298 feet high, is 0.8 mile E of Cape Morgan. Close to these islets on the offshore side the depth is 14 fathoms.

(172) **Cape Morgan,** the SW end of Akutan Island, is a prominent headland with steep, high cliffs intersected by dikes of hard rock of characteristic color. **Triplet Rocks,** three pinnacles 8 to 15 feet high, are 600 yards off the cape. In navigating Akutan Pass, Triplet Rocks should be given a berth of over 0.5 mile.

(173) Cape Morgan is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around this rookery which encompasses Flat, Cascade, and Broad Bights and Triplet Rocks. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(174) **Flat Bight** is N of a bold headland which forms the NW part of the Cape Morgan peninsula. At the headland, foul ground with thick kelp extends 0.5 mile offshore, and a covered rock is near a rock awash 0.3 mile N of the headland. The bight is bordered by a gravel beach 1 mile long, which in turn is backed by a low, grassy valley. Temporary anchorage in E weather can be found 0.6 mile from shore in 12 fathoms, sand bottom.

(175) A large rock 2 feet high is 1 mile S of Reef Point and 400 yards from shore. A depth of 12 fathoms can be carried to the face of this rock. There is no kelp around it. Several other rocks are inshore of this one, but they are inside the kelp line. A rock awash is 0.8 mile farther to the S and 250 yards from shore.

(176) The shore between Reef Point and Flat Bight is an eroded bluff 300 to 600 feet high; when close by, a reddish outcrop is discernible.

(177) **Chart 16528.–Akutan Pass** and Unalga Pass, on either side of Unalga Island, are ship passages, secondary to Unimak Pass, for entering the Bering Sea from the Pacific through the E part of the Aleutian Chain. Akutan Pass is 2.5 miles wide in its narrowest part between the Baby Islands on the SW and Triplet Rocks off Cape Morgan. The depths in the pass are very irregular, but no hidden dangers have been found. Depths less than 10 fathoms extend about 0.4 mile S from Triplet Rocks, and the tide rips there are intensified, appearing as breakers. Small craft should avoid them. A narrow, crescent-shaped shoal with a least depth of

8 fathoms is 3.5 miles NW from Cape Morgan. The shoal can be detected by the swirls and tide rips marking it.

(178) Akutan Pass is wider than Unalaga Pass, but the currents and tide rips are similar. However, the current is felt over a much greater distance, so that with an adverse current it has been found that better time can be made by using Unalaga Pass. On the larger tides, the flood creates such heavy tide rips N of Unalaga Island, even in calm weather, that it is advisable to be prepared to take seas aboard. Tide rips 15 feet high have been observed. In approaching both Akutan Pass and Baby Pass, fewer rips will be encountered if courses are directed for the area SE of the Baby Islands and then swing over to either pass. This area is comparatively quiet on the ebb when both of the passes have heavy tide rips.

(179) Akutan Pass, in the daytime and with clear weather and a fair current, furnishes a convenient route for vessels bound to or from Unalaska Bay. From E it is recommended that courses be steered to make land in the vicinity of Tigalda Island and Avatanak Island; then follow the S side of these islands until the course is shaped from Rootok Island to Cape Morgan. A midchannel course through the pass is recommended.

(180) Remarks on currents in Akutan Pass will be found in the first part of this chapter. (See the Tidal Current Tables for predictions for Akutan Pass.)

(181) **Baby Islands,** a group of six low islands in Akutan Pass and N of the E end of Unalga Island, have numerous rocks among them. The islands are all tundra covered. On the W island is a large rookery and the ground is very pitted over almost the entire top. The SE island is used as a fox ranch. When seen apart from Unalga Island, the Baby Islands are prominent although they tend to blend together to appear as one island.

(182) Strong currents sweep among the Baby Islands. The S end of the passage between the two SE islands is blocked by a reef bare at low water, forming a small protected bay, but strong currents make it a rather uncomfortable anchorage for small boats.

(183) **Baby Pass,** about 0.8 mile wide, separates Unalga Island from the Baby Islands. Ledges along the shore restrict the navigable width, but depths up to 20 fathoms will be found in midchannel. Less water is found at the N end of the pass.

(184) On the Unalga shore of Baby Pass is a shallow cove in which small boats may get fair protection from S and W weather; however, a rock awash at low water is a little S of the middle of the cove. Off the N point of the cove is a group of bare rocks that extend into Baby Pass. The outer rock, 12 feet high, is 300 yards from the point. Foul ground extends 400 yards into Baby Pass from the 0.8 mile stretch of shore W of the cove.

(185) Very heavy tide rips occur to the NW of the Baby Islands on the flood, and extend a considerable distance to the SE on the ebb. (See remarks on tide rips in Akutan Pass.) The flood and ebb current velocity is about 4 and 5 knots, respectively. Flood and ebb velocities of 5.5 and 7 knots occur at times of tropic tides. (See the Tidal Current Tables for predictions for Baby Pass.

(186) **Unalga Island** is separated from Unalaska Island by Unalga Pass. The island is low compared to the neighboring islands, the highest point being a rounded hill of 707 feet SW of the central point. The E end of Unalga Island is a flat-topped hill, 145 feet high.

(187) **Malga Bay,** on the NW side of Unalga Island, is about 0.6 mile in diameter and affords shelter in S weather. The E shore of the bay is a chain of jagged rocks and islets, the highest being 106 feet. Temporary anchorage in S weather can be found in the center of the bay in 11 fathoms.

(188) On the N coast of Unalga Island, precipitous bluffs rise 100 to 200 feet, blending abruptly at the top into rolling, slightly rising, tundra-covered tableland. There is generally no beach, though a flat rock shelf, from 10 to 30 feet wide, extends from the bluffs to the water's edge. In places a few scattered boulders may be found on the shelf.

(189) On the S shore of Unalga Island, a prominent cylindrical rock, 120 feet high, is 0.5 mile S of the E end of the island and 375 yards offshore. A point terminating in a rounded knoll, 150 feet high, is 1.8 miles SW of the E extremity.

(190) A large barn, about 1 mile SW of the E end of Unalga Island, is on the side of a hill over 100 feet high, and is conspicuous from the S. Several small houses are in the gully below the barn, but can be seen only when close-to.

(191) Numerous boulders and rocks border the S shore of Unalga Island. A dangerous rock, covered 2¼ fathoms, is 700 yards off, midway of this shore.

(192) Off the SW extremity of Unalga Island, a group of rocks extend about 200 yards into Unalga Pass, and a rock about 4 feet high near the outer end of the group is conspicuous while entering the pass. The 4-foot rock should be given a berth of 300 yards.

(193) **Unalga Pass,** the narrowest of the three principally used passes in the E Aleutians, is about 1.3 miles wide in its narrowest part and, with the exception of rocks which make out a short distance from Unalaska and Unalga Islands, is free from dangers. The depths in Unalga Pass vary from 9 fathoms, at the SE end of the pass, to over 50 fathoms.

(194) Under normal conditions the pass is not difficult to navigate as the current sets fair with the pass. In thick weather the shore of Unalga Island can be approached close enough to pick up an echo and followed through the pass. The soundings, especially in the S approaches, furnish numerous characteristic depths to assist a vessel, equipped with echo sounding apparatus, to determine its position. For these reasons, coupled with the fact that this pass has been thoroughly surveyed, it is believed that it has distinct advantages over Akutan Pass for vessels going N, especially in thick weather. However, under exceptional circumstances, currents and tide rips of unusual magnitude may be encountered; and treacherous seas, particularly in the narrow part of Unalga Pass, caused by wind opposing the current, often sweep a vessel without warning. These have caused severe damage and men have been washed overboard with resultant loss of life. There are temporary anchorages, easy of access, at either end of Unalga Pass where better conditions may be awaited.

(195) S of Unalga Pass, a belt of deep water leading into Beaver Inlet makes the approach to the pass on echo soundings comparatively easy; the 50-fathom curve can be followed along the E limit of the deep, and the 100-fathom curve along the N limit. In the outer reaches of Beaver Inlet it has been found possible to catch a glimpse of the shore during the summer fogs. For this reason and because of ease of access, it can be recommended as good practice in thick weather to make the slight detour into the inlet to check the vessel's position before entering Unalga Pass. The currents in the entrance to Beaver Inlet generally do not exceed 2 knots.

(196) (See the Tidal Current Tables for current predictions for Unalga Pass.)

(197) **Deep Bay,** indenting Unalaska Island on the N side of the entrance to Beaver Inlet, is protected on the NE by rocks awash

and small islets which make offshore about 0.3 mile; the ledge continues, totally submerged, 0.3 mile farther and terminates in a kelp-marked ¾-fathom rocky shoal which breaks in SE weather. A kelp-marked 1¼-fathom rocky shoal is 0.3 mile off the bluff point on the SW side of the entrance. Temporary anchorage in NW weather can be found at the entrance to the small cove in the NW corner of the bay, in 10 to 20 fathoms.

(198) Beaver Inlet is described later in this chapter.

(199) From the ledge marking the E part of Deep Bay, the shore extends NE for 2 miles to Brundage Head. This stretch of shore has numerous rocks and islets that extend as much as 0.3 mile offshore, and strong currents are noticeable.

(200) **Brundage Head,** on the W side of the S entrance to Unalga Pass, has a knoll 192 feet high at its outer end. A pinnacle rock, 22 feet high and 300 yards E of the point, has deep water outside of it.

(201) **Fisherman Point,** about 1 mile NW from Brundage Head, is 140 feet high. A reef, with several bare rocks about 15 feet high and marked by heavy kelp, extends over 400 yards N from the point. The shore between Fisherman Point and Brundage Head is fringed with rocks, but none extend more than about 300 yards into the pass.

(202) **English Bay,** on the W side of Fisherman Point, is a secure anchorage for small vessels. The W shore of the bay trends due S for about 2 miles to a low point, where it turns sharply W for 0.9 mile to the head of an arm about 0.3 mile wide. The most secure anchorage is in this narrow arm, SW of the low point at the turn. The width of this anchorage between the 5-fathom curves is about 300 yards. Good anchorage with more swinging room can be found E of the low point in 8 to 10 fathoms, but a shoal area that extends 400 yards off the shore N of the point must be cleared.

(203) In entering English Bay, account must be taken of the strong currents in Unalga Pass; follow a midchannel course, giving the W shore a berth of at least 0.3 mile, and when heading into the arm at the head of the bay favor the S shore slightly. Good holding ground in 12 to 20 fathoms will be found near the entrance.

(204) From English Bay N, the Unalaska shore of Unalga Pass is much higher.

(205) **Erskine Point,** about 3 miles NW of Fisherman Point, is the N extremity of a ridge 1,432 feet high. Along the shore from English Bay to Erskine Point are numerous rocks, but none are more than 250 yards off.

(206) **Lofty Mountain,** 2,284 feet high and 2.5 miles SW from Erskine Point, is a symmetrically-shaped conical peak, the highest point in the vicinity. It is easily identified, and as it is often clear when surroundings are obscured, makes a valuable landmark.

(207) **Chart 16011.–Unalaska Island,** one of the larger of the Fox Islands which form the E group of the Aleutian Island chain, is about 67 miles in length along the axis of the chain. The island is mountainous, and during the greater part of the year the higher elevations are covered with snow. The irregular coastline is broken by three long deep bays, Beaver Inlet, Unalaska Bay, and Makushin Bay, as well as by numerous smaller bays and coves. In general, the bays have deep water close to shore, sometimes too deep for convenient anchorage. Makushin Volcano, the highest point on the island, is near the NW side and about 25 miles from the E end of the island. In clear weather the volcano is a prominent landmark for vessels bound to Dutch Harbor, in Unalaska Bay.

(208) **Naval Defensive Sea Area and Airspace Reservation**.–Under the authority of Executive Orders 8680 of February 14, 1941 and 8729 of April 2, 1941, Unalaska Island is a designated Naval Defensive Sea Area and Airspace Reservation. Restrictions imposed under the authority of the above executive orders have been suspended subject to reinstatement without notice at any time that the interests of national defense may require such action.

(209) **Chart 16528.–Kalekta Bay** is a broad, open bay in the N end of Unalaska Island just E of Unalaska Bay. An obstruction, covered 11 feet, is reported to be 800 yards off the W shore of the bay in about 53°59'N., 166°21'W. There are no other known dangers over 400 yards from shore. There are a number of places where a vessel may anchor; but as this bay is open N, English Bay and Dutch Harbor are recommended. A pinnacle rock is off Erskine Point, the E point at the entrance, somewhat similar to Priest Rock off Cape Kalekta, but the rock off Erskine Point is distinguished by a smaller one between it and the point. On the W side of Kalekta Bay, 1.8 miles in from Cape Kalekta, is a narrow pinnacle rock 45 feet high, 100 yards offshore.

(210) On the W side of Kalekta Bay, 3 miles S from Cape Kalekta, a gap cuts through to Constantine Bay in a WSW direction. This gap is filled by a lagoon not connected with either bay. A reef extends 400 yards offshore just S of this gap. Anchorage may be found in the S end of the bay 0.5 mile from shore in 12 to 20 fathoms, sandy bottom. Small craft may find anchorage in the center of the small bight 0.5 mile in diameter on the E side of the bay, 1 mile in from Erskine Point, in 5 fathoms, rocky bottom. The holding ground is poor and this bight is not recommended for anchorage except in emergency.

(211) **Unalaska Bay** opens into the Bering Sea between Cape Kalekta and Cape Cheerful when on the N side of Unalaska Island. The bay has little commerce except for diesel oil and supplies for the local village of Unalaska. The shores of the bay are in general mountainous, with precipitous sea faces. Amaknak Island is near the S end of the bay. W of the island the water is deep, but there is no good harbor in this part of the bay; E of the island are the important harbors and anchorages of Iliuliuk Bay, Dutch Harbor, and Iliuliuk Harbor. The channel to Iliuliuk Bay and Dutch Harbor is free from dangers, except along the shores. Iliuliuk Harbor is obstructed at its entrance by ledges, but with the aid of the buoys, it is not difficult to enter with a vessel under 250 feet in length.

(212) Unalaska Bay is open to navigation at all seasons. It is reported that on two occasions the drift ice of Bering Sea entered Unalaska Bay, but such an occurrence is so rare that it need not be considered. Ice often forms in the sheltered coves and harbors in cold, calm weather, but it never attains any thickness or interferes with navigation.

(213) **Prominent features.**–Makushin Volcano (see chart 16518), 6,680 feet high, is the highest point on Unalaska Island. The volcano can generally be seen in clear weather. Table Top Mountain, 2,710 feet high, back of Cape Cheerful, and the crater of an extinct volcano with three points, the highest being 2,293 feet, W of Eider Point, are distinctive. Either peak may be used as a leading mark in approaching Cape Cheerful until close enough to distinguish the surrounding features; however, the crater W of Eider Point can be used only when it is not obstructed from view

by the higher elevations NW of it. On getting close to the island, when the fog hangs over the land but leaves a clear space just along the water's edge, Wislow Island (see chart 16518) forms a good mark. It is in a small bay about 2 miles W of Cape Cheerful, and is a small, rounded island, regular in shape, and stands far enough from the land to be seen as not a part of the main island. W, under similar conditions, Koriga Point can be seen at times. The land slopes gently to the point from Makushin Volcano, and ends in a small peak-like formation. From E the cascade SE of Cape Cheerful is also useful as a mark, particularly in low visibility. Strangers, when in the vicinity and uncertain of the identity of the bay and its landmarks, should endeavor to pick out Ulakta Head. Looking into the bay, its flat top breaking off abruptly to sloping sides presents an appearance unlike any other in the vicinity, and shows up well against the background of mountains. When sighted, steer for it, leave it on the starboard hand, and follow around, keeping out of kelp.

(214) **Chelan Bank,** the extensive 45-fathom bank that extends about 7 miles NE from the vicinity of Cape Cheerful, may be found useful in fixing the position of a vessel by soundings. The bottom on the bank is composed of black sand and gravel; on the shelving areas the bottom is of gray sand and gravel up to about the 80-fathom depth. Chelan Bank, at its NE end, almost makes a junction with a similar bank that extends N and W from Cape Kalekta, the two banks practically enclosing Unalaska Bay. A light tide rip occurs along the outer edge of Chelan Bank.

(215) **Routes, Unalaska Bay.**–When bound for the bay from any part of Bering Sea, it is recommended to shape the course for Cape Cheerful. In thick weather it is better to fall W of Cape Cheerful and then round it than to fall to the E, with the possibility of being carried by currents into the dangerous regions of the passes.

(216) **Cape Kalekta** is the headland at the E side of the entrance to Unalaska Bay. The headland has two summits 785 and 904 feet high, and a ridge, which sags to about 700 feet, connects the headland with the mountains to the S. The rounded extremity of the cape is the base of the slope from the lesser summit. When viewed sidewise, this slope which forms the end of the headland is rounded in outline, rising precipitously at the water's edge and then bending gradually to meet the lesser summit.

(217) The 904-foot summit is very close to the W side of the cape. It is predominant, being the highest point on the headland. Viewing the cape from either side, this summit has somewhat the shape of a crown. When off the extremity of the cape it appears as a sharp peak and the outline of a spur along the W descent becomes visible. This spur is composed of the massive protuberances, the most prominent of which takes the shape of a vertical shaft of rock rising above the level of the top of Priest Rock.

(218) Cape Kalekta is rugged and precipitous at its extremity and particularly so on its W side. The headland rises almost vertically at the waterline with a few detached rocks including Priest Rock, but no beaches. The area about the extremity is foul and marked by kelp, and a dangerous ledge which uncovers 1 foot, usually marked by breakers, is nearly 0.4 mile N from the cape. The ledge is roughly in line with the pinnacle of Priest Rock and the W parts of the low islets N of Priest Rock. Broken bottom extends about 200 yards farther out. The N end of the cape should be given a berth of at least 1.2 miles to avoid being carried toward the dangers by strong currents. There are pronounced tide rips.

(219) **Priest Rock,** close-to, off the N side of Cape Kalekta, is a pinnacle 204 feet high. It is one of the most important landmarks in making Unalaska. Priest Rock should not be confused with the pinnacle rock off Erskine Point. Two low rocky islets of appreciable area are N of Priest Rock.

(220) The cascade S of Cape Cheerful is visible off Cape Kalekta.

(221) The point on the E shore of Unalaska Bay, about 1.4 miles S of Priest Rock, presents a smooth, rounded profile and is grass covered. The shore on either side of the point has little or no irregularity. The land about the point rises somewhat abruptly at the shore to about 150 feet, then rounds to assume a more or less flat area. This area has a gentle slope toward the steeper slopes leading up to a series of jagged peaks 0.5 mile inland from the point. The peaks have no particular distinctiveness. The 10-fathom depth curve is almost 0.5 mile off the point and broken bottom with a 1½-fathom spot is inside the curve.

(222) **Princess Head,** on the E side of Unalaska Bay, about 1.9 miles from Priest Rock, is a wall-like rock formation that extends out for 200 yards from the shore cliff of that locality. The outer 200-foot length forms the highest part or head of the feature. The head has a fairly level top 214 feet high. The side facing the SW presents the surface of a rough square, distinguished from the remainder of the rock formation by its lighter shade. Small knobs on the top of the head mark the upper corners of the square. The head is an important and distinctive landmark, especially when in close to the E shore of Unalaska Bay, in thick weather or when fog closes out the peaks. Two low detached rocks are off the end of Princess Head.

(223) The rounded shore in the vicinity of Princess Head is the base of a mountain rising to a peak 1,729 feet high. The S slope of this mountain descends gradually to the lagoon in a low gap which bisects Cape Kalekta peninsula. The point on the rounded shore is a spur from the base of the mountain. The spur parallels Princess Head and is 0.3 mile SW of it. A smaller projection from the shore is close N of the point. A group of bare rocks are off the point; about 100 yards off the outer one of this group is a rock that uncovers 2 feet.

(224) **Constantine Bay,** on the E side of Unalaska Bay, has shoal and irregular depths, less than 10 fathoms, and its use as an anchorage, except by small craft under favorable conditions, is not recommended. The shore at the head of the bay is sandy. The SW shore is fringed with rocky ledges. On the E side of the bay is a gap in the land that extends ENE to Kalekta Bay. This gap is filled with a lagoon which is not connected with either bay.

(225) The headland W of Constantine Bay is rugged and precipitous and the area near and around its extremity is foul with rocks and kelp. The bluffs along the 1.5-mile stretch of shore S of the extremity, facing Unalaska Bay, are especially high. They are very rugged and have gray, rocky knobs and deep vertical scars, giving the appearance of vertical stratification. **Split Top Mountain** marks the S end of this formation; the bluffs rise to more than 1,600 feet near the peak.

(226) **Summer Bay,** a wide opening in the E shore of Unalaska Bay, opposite Ulakta Head, is composed of several coves, the heads of which are low and sandy. **Morris Cove,** on the E side just N of a prominent headland, has depths less than 4 fathoms, and the bottom is somewhat irregular. In the small cove between the S cove and the headland, the depths decrease uniformly from 4 fathoms in midchannel to the sand shore at the head. The depths in the S cove are shallow and irregular.

(227) **Chart 16529.–Second Priest Rock,** a pinnacle 75 feet high, is close to the N side of the headland between Summer and Iliuliuk Bays. The pinnacle stands on the reef bordering the shore of the headland. A dangerous rocky shoal extends 0.2 mile N from the headland.

(228) **Ulakta Head,** the N end of **Amaknak Island,** is about 900 feet high. It has a flat top, and in clear weather it is one of the best landmarks for fixing the position of Unalaska Bay. Looking into the bay, its flat top, breaking off abruptly to sloping sides, presents an appearance unlike any other in the vicinity, and shows up well against the background of mountains. From its NW point a reef extends 0.1 mile, marked by **Needle Rock,** similar in appearance to Priest Rock, but not so large.

(229) **Ulakta Head Light** (53°55.5'N., 166°30.5'W.), 61 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the reef bordering the NE side of Ulakta Head. A pinnacle rock, 30 feet high, adjacent to the shore, is about 50 yards W of the light. Another rock, 20 feet high, is 75 yards NW of the light.

(230) **Mount Ballyhoo,** 1,589 feet high, dominates Amaknak Island.

(231) **Iliuliuk Bay** has its N entrance between Ulakta Head and Second Priest Rock. The entrance is marked by a light bell buoy. N of Spithead is a covered ridge that extends across the bay with at least 7 to 8 fathoms near the middle of the bay; kelp has been seen on this ridge in about midchannel. S of this ridge the depths increase to 20 fathoms. There is anchorage almost anywhere in the bay. The usual anchorage is at the head in 14 to 16 fathoms, muddy bottom, where, even with N winds, the force of the sea does not seem to reach.

(232) At the head of Iliuliuk Bay, behind the town of Unalaska, is a ravine or break in the mountains, that extends through to the water S. This is sometimes useful as a guide in entering the bay. Buildings at Unalaska, on the lowland at the head of the bay, are prominent.

(233) **Spithead** is the end of the long, low, sandspit which forms the E side of Dutch Harbor. **Spithead Light** (53°53.8'N., 166°30.9'W.), 38 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the S end of the spit. Shoal water, less than 6 fathoms, marked prominently by kelp, extends 0.3 mile into Iliuliuk Bay from the middle part of the sandspit.

(234) The W shore of Iliuliuk Bay S of the sandspit is fringed with rocks and should not be approached closer than 0.3 mile.

(235) **Rocky Point** has a kelp-marked reef that extends 400 yards toward Spithead; the outer limit is marked by a lighted buoy. A rock, covered ¾ fathom, is 250 yards NE of the point. Along the E side of Rocky Point the reef is extensive; the 10-fathom curve, which marks the outer limit of broken bottom in this part of Iliuliuk Bay, roughly parallels the side of the point at a distance of nearly 400 yards.

(236) A signal station and six oil storage tanks are on the hillcrest W of Rocky Point. Eight additional tanks are 0.1 mile S of Rocky Point.

(237) **Dutch Harbor,** on the W side of Iliuliuk Bay, has its entrance between Spithead and Rocky Point. The water is deep close to the shores and in all parts of the harbor, except off Rocky Point. The entrance is about 0.5 mile wide and 16 to 18 fathoms deep.

(238) Mariners are advised not to anchor in the area W of a line from Rocky Point to the city dock (53°54'12"N., 166°31'40"W.), because their anchor may be fouled on lost ground tackle on the bottom of the harbor. Anchorage may be had elsewhere in the harbor (except in or near cable areas), in 14 to 22 fathoms. Violent williwaws are experienced during gales, especially from the SW, and the best shelter will be found under the high part of the island well N of the entrance. SW gales practically have a clear sweep across the entrance because of the lowland W. Vessels forced to moor at Chevron U.S.A., Dutch Harbor Terminal Wharf during the early spring and fall will find it necessary to use chains and wire cables in addition to mooring lines during the severe gales.

(239) **Wharves.–**Numerous wharves, piers, and docks are at Amaknak and Unalaska Islands. For a complete description of the port facilities refer to Port Series No. 38, published and sold by the U.S. Army Corps of Engineers. (See appendix for address.)

(240) **Pacific Western, Dutch Harbor Terminal Wharf:** a T-head pier about 0.3 mile W of Rocky Point; 320-foot face; 31 feet alongside; deck height, 18 feet; pipelines extend from wharf to storage tanks in rear, total capacity of 381,000 barrels; receipt and shipment of petroleum products; bunkering vessels; owned and operated by Pacific Western.

(241) In 1976, a 45-foot section of the northernmost third of the loading face was unusable. Submerged piles, the remains of a previous structure, may exist close to the SE end of the pier; this area should be avoided. Large vessels berthing at this pier should drop anchor well offshore and warp in to enable them to get away at once in case of a sudden onshore wind.

(242) **Unalaska City Dock**: 0.7 mile NNE of Pacific Western, Dutch Harbor Terminal Wharf; 427-foot face, 650 feet total berthing space; 35 feet alongside; deck height, 18 feet; 5,000 feet of covered storage area; open storage area for 100 containers; receipt and shipment of containerized and conventional general cargo; owned and operated by City of Unalaska.

(243) The Coast Guard maintains a wet storage area for buoys, close NE of Unalaska City Dock.

(244) **Sea Alaska Products Docks**: 0.6 mile NE of Unalaska City Dock; 1,310 feet total berthing space; 35 feet alongside; deck heights, 10 feet; receipt of seafood; handling supplies and equipment; owned and operated by Sea Alaska Products, subsidiary of ConAgra Corp.

(245) **Unalaska Small-Boat Harbor Wharf:** midway on the W side of the spit; 975 feet total berthing space; 20 to 30 feet alongside; deck heights, 2 to 12 feet; mooring commercial vessels and recreation craft; owned and operated by the City of Unalaska.

(246) **Ounalaska Corp. Docks**: N end of the harbor; 220 feet of berthing space; 20 feet alongside; deck heights, 16 feet; handling fishing equipment and supplies; owned and operated by Ounalaska Corp.

(247) **American President Lines Dutch Harbor Wharf**: 0.35 mile SW of Rocky Point; 613-foot face; 40 feet alongside; deck height, 12 feet; cranes to 40 tons; 9,000 square feet of covered storage area; open storage area for 306 containers; receipt and shipment of containerized and conventional general cargo; owned by Dutch Harbor Development Corp. and operated by American President Lines, Ltd.

(248) Immediately S of the container pier, and fronting Iliuliuk Bay, are the ruins of another oil pier; submerged piles and broken dolphins may exist.

(249) **Pilotage, Dutch Harbor**.–Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(250) The Aleutian Islands are served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(251) Vessels using Southwest Alaska Pilots Association pilots and en route to Dutch Harbor can meet the pilot boat about 1 mile E of Ulakta Head Light (53°55.5'N., 166°30.5'W.). The pilotage outer boundary is 2 miles N of Ulakta Head Light.

(252) The pilot boat can be contacted by calling "DUTCH HARBOR PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(253) Dutch Harbor is a **customs station.**

(254) An **Immigration and Naturalization Service** office is located in Dutch Harbor. (See chapter 3, Vessel Arrival Inspections, and appendix for address.)

(255) **Tides.**–(See the Tide Tables for predictions for Dutch Harbor.) The diurnal range of tide is 3.7 feet. The tidal current in Dutch Harbor is inappreciable, and in Iliuliuk Harbor the velocity does not exceed 1 knot.

(256) **Supplies.–**Provisions and fuel are available in Unalaska and Dutch Harbor.

(257) **Repairs.–**A shipyard is at the old submarine base at Dutch Harbor. A covered marine railway at the shipyard can handle craft over 100 feet long and to 300 tons. A boat repair facility at Dutch Harbor has a machine shop and specializes in underwater repairs.

(258) **Communication.–**Passengers, freight, and mail for Dutch Harbor are handled by air. Dutch harbor has regular airline service year round. Telephone service is available. The Dutch Harbor marine operator monitors VHF-FM channel 28.

(259) An outpatient clinic in Dutch Harbor has two physician's assistants on call 24 hours a day. The clinic monitors 4125 kHz during working hours and may also be reached through the Unalaska Police Department on VHF-FM channel 16.

(260) **Unalaska** is on a low strip of land between the shore at the head of Iliuliuk Bay and a stream which empties into Iliuliuk Harbor. The wharf is at the W end of the strip of lowland. The N side of the wharf faces the passage connecting the bay and harbor and the W side faces the harbor. The channel approach to the passage is endangered by Iliuliuk Reef which is off the town in Iliuliuk Bay.

(261) Unalaska is the largest settlement in the Aleutian Islands. The original Russian settlement was known as Iliuliuk. The principal sources of income are trapping and seasonal employment in the Pribilof Islands. Unalaska has a public grade and high school, and a general store.

(262) A radio station is at Unalaska. Telephone service is available. Passengers, freight, and mail for Unalaska are handled by air.

(263) **Iliuliuk Reef,** a ledge bare in places, extends 250 yards in an E-W direction. From the E dry rocks, a ledge covered 12 to 15 feet and marked by kelp extends 150 yards S.

(264) **East Channel** is a dredged, buoyed passage connecting Iliuliuk Bay and Harbor. In September 1998, the midchannel controlling depth was 22 feet. **South Channel,** a buoyed passage between Captains Bay and Iliuliuk Harbor, has a controlling depth of about 28 feet. A fixed highway bridge with a clearance of 20 feet crosses South Channel about 300 yards SSE of Expedition Island.

(265) The channel N of Iliuliuk Reef has a least depth of 17 feet, but it should not be attempted without local knowledge. On the N side of the channel at its E end, 200 yards N of the E end of Iliuliuk Reef, is a depth of 1¼ fathoms off the end of a pointed reef that extends from the shore.

(266) The Alyeska Fisheries Shore Plant Wharf at Unalaska provides 910 feet of berthing space with a depth of 35 feet alongside. It is owned and operated by Pan Alaska Fisheries, Inc., subsidiary of Castle and Cooke, Inc. A spit makes out from the N shore of the passage N of the wharf.

(267) The Coast Guard reports that an eddy has been noted making against the E end of the wharf at Unalaska on the ebb but it is not dangerous. The currents setting in and out of the harbor generally follow the trend of the channels and do not exceed 1 knot in the main entrance channel.

(268) **Iliuliuk Harbor,** the harbor for Unalaska, may be entered through East Channel from Iliuliuk Bay or through South Channel from Captains Bay. The latter channel carries the greater depth and is the most easily navigated during N weather. The distance through East Channel is shorter for vessels from Dutch Harbor or the Bering Sea but South Channel is nearer for vessels from Captains Bay. Iliuliuk Harbor is small but landlocked with good holding ground, and an average depth of 10 fathoms. There is sufficient room for backing and filling in turning a moderate-sized ship. Violent williwaws are experienced with S gales. Vessels under 200 feet in length have ridden out gales here, but the short scope of chain allowable usually causes the anchor to drag. Because of the limited swinging room, an anchorage in Dutch Harbor or Unalaska Bay is recommended during severe weather. During the fishing season, the harbor entrances become highly congested with fishing vessels, and caution should be exercised when entering or leaving.

(269) Seafood processing facilities are along the shores of Iliuliuk Harbor.

(270) **Expedition Island** is in the S part of Iliuliuk Harbor. On the island is a small grove of evergreens. The trees are from Sitka and were transplanted in 1805 by a Russian Orthodox priest. A similar grove is near the old Indian village of Amaknak. The trees are 25 feet in height and their number apparently has not increased.

(271) The dock resembling an off-center "T" on the NE side of the island has a 210-foot face with 25 feet alongside; it is owned and operated by Great Land Seafood and Universal Seafood.

(272) **Bailey Ledge,** near midchannel at the S end of the passage leading from Captains Bay to Iliuliuk Harbor, is of small extent, steep-to, and marked by a light with a red and white daymark. Only a small amount of kelp marks this ledge, which uncovers 2 feet.

(273) **South Amaknak Rocks** is in a foul area that extends from the S extremity of Amaknak Island. The smaller 15-foot rock near the S edge of the foul ground is about 250 yards SE of the larger 30-foot rock. A deepwater channel is located between the buoy marking this group of rocks and Bailey Ledge and also about 250 yards E of the E South Amaknak Rock, thence deep water may be carried to the S entrance of Iliuliuk Harbor by favoring the E shore.

(274) **Chart 16530.–Captains Bay** is the arm at the head of Unalaska Bay. Its entrance from Unalaska Bay direct is W of Amaknak Island. The bay is also entered, as previously indicated,

by passing E of Amaknak Island through Iliuliuk Harbor, and through the channel leading S from the harbor.

(275) The entrance to Captains Bay W of Amaknak Island is marked by Arch Rock, 4 feet high, adjacent to the point 0.8 mile from the S extremity of the island. Directly opposite Arch Rock is a bold point marking the W side of the entrance. A reef extends 220 yards channelward from the bold point, and from the reef a bar of 5 to 8 fathoms extends to a point nearly three-quarters of the distance across the entrance toward Arch Rock. Large vessels in entering should pass about 100 to 200 yards off Arch Rock as the deepwater channel will be found at those distances.

(276) A wharf about 200 yards long with reported depths of 6 to 8 fathoms alongside is on the E side of the bay about 1.7 miles below Arch Rock. The wharf is owned by Crowley Maritime/Pacific Pioneer. Fuel and water are available. In March 1982, unexploded ordnance was reported about 40 feet seaward of the wharf; vessels are advised not to use anchors in this area.

(277) Anchorage may be had in 17 to 20 fathoms, even bottom of mud and sand, about 0.4 mile E of the northernmost island of the group at the head of Captains Bay. In approaching this anchorage favor the E shore to avoid **Swallow Reef** and the shoal to the S, which is NE and E of the northernmost island. A reef extends 150 yards from the E shore about abreast of Swallow Reef. A buoy is about 200 yards NE of Swallow Reef. Small craft may obtain secure shelter in 9 fathoms, sand and mud bottom, at **Port Levashef,** E of the most S of the larger islands.

(278) **Hog Island,** 300 feet high, is off the W side of Amaknak Island in Unalaska Bay. Foul ground, marked by a lighted buoy, extends nearly 0.5 mile N of Hog Island. The reef that extends 0.3 mile from the N point, a part of the foul ground, has numerous rock ledges jutting up from the rocky bottom. Clear passage exists between Hog Island and Amaknak Island. Favor Amaknak Island to avoid a 3¼ fathom shoal, that is 600 yards NE of the S end of Hog Island. A large, thick kelp patch, marked by a lighted buoy on its SW end, is S of Hog Island and should be avoided.

(279) **Nateekin Bay,** on the SW side of Unalaska Bay, affords good anchorage, except for NE winds, for small craft in 3 to 4 fathoms, 490 yards E of the head of the middle bight on the NW shore. A shoal area covered 1 fathom is SE of this anchorage.

(280) **Chart 16528.– Broad Bay,** a bight in the W shore of Unalaska Bay 2.5 miles S of Eider Point, affords fair anchorage in 25 fathoms, sandy bottom, 0.5 mile offshore. The anchorage is exposed to NE weather.

(281) **Wide Bay,** 1.2 miles SW of Eider Point also affords fair anchorage in 25 fathoms, mud and sand bottom, 0.4 mile from the W head of the bight.

(282) **Makushin Valley,** which borders on Broad Bay, is a flat, covered with grass, and about 15 feet above high water. A sizable stream courses through the valley. The shore along Broad Bay is composed of very coarse sand. A similar valley and shore are found at Wide Bay. The cascade just N of Broad Bay can be seen only in the restricted area to the SE.

(283) **Eider Point** is at the S end of a rocky bluff-formation of great height which characterizes the coast for several miles along the W side of the entrance to Unalaska Bay. In places along this shore there are massive accumulations of loose rock and earth lying at the base of the bluffs, formed by slides. The bluffs are of horizontal strata and like those about Cape Cheerful have a distinct reddish hue. Eider Point is a comparatively low projection pointing S, and from it a narrow reef extends in the same direction for 0.6 mile into Unalaska Bay. The reef uncovers 2 to 4 feet and usually breaks at high tide but not generally along its outer limit. Although deep water can be carried from seaward to the vicinity of the end of the reef, Eider Point should be given a berth of at least 1 mile when passing S of it.

(284) A 133-foot-high cascade, 1.5 miles N of Eider Point, is the most distinguishable feature between the point and Cape Cheerful. It is an excellent landmark during a low-ceiling fog when only the lower part of the cascade can be seen. The bluff at the cascade has a remarkably smooth, stratified face, up to an elevation of about 100 feet, where it forms a distinct horizontal line directly above which the upper strata have very irregular surfaces and appear to overhang in places. The cascade emerges from a slight depression at the top to form a comparatively narrow white waterfall to a sea level bench at the foot of the bluff. On either side of the cascade are rockslide and earthslide accumulations.

(285) **Chart 16518.–Cape Cheerful,** on the N coast of Unalaska Island just W of Unalaska Bay, consists of a main and secondary headland about 1 mile apart, the two headlands being separated by a low grassy valley emerging on the coast. The valley is flat at the base and resembles an amphitheater; it is called The Dry Dock.

(286) The main headland is the W of the two and is adjacent to Reese Bay; it projects farther to seaward and is marked by a peak 1,808 feet high. The peak is close to the extremity of the headland and dominates the end of the cape from most directions of approach. It may, however, merge with the higher elevations back of the secondary headland or be shut out by them when the peak and higher elevations are on range.

(287) **Table Top Mountain,** 2,710 feet high, is the highest summit back of Cape Cheerful, but there are several peaks to the E of it approaching this elevation. The W slope of this mountain descends to the deep valley that extends inland from Reese Bay. The mountain has a wide flat top.

(288) The bluffs about Cape Cheerful present a rugged and almost vertical appearance, and rise to 1,000 feet. They are of horizontal strata and have a distinct reddish hue. Large slides of loose rock at the waterline can be seen along the cape. The area outside the base of the bluffs, that is at or near the high-water line, is very rocky and strewn with boulders. Foul ground extends several hundred yards off the extremity of the secondary headland and its NE side. Depths of over 20 fathoms are found 0.5 mile off Cape Cheerful.

(289) The currents apparently meet in the vicinity of Cape Cheerful, the flood setting NW from Unalga Pass and NE from Point Kadin, creating eddies which set toward the shore. In rough weather the seas are apparently accentuated in the vicinity of the cape and it is therefore advisable to give it a wide berth under such conditions.

(290) **Reese Bay,** a cove between Cape Cheerful and Cape Wislow, is about 1 mile wide at the head, which consists of a low, narrow strip of sand with some marsh grass. It indents the shoreline about 1 mile, but appears larger because of the pronounced valley or mountain gap that extends inland from the coarse sand beach at the head of the cove. It is a long flat, covered with grass, partly filled by **McLees Lake,** and flanked by the side slopes of ridges that terminate at each cape. **Wislow Island** is in the middle of Reese Bay, and although rocky, appears regularly rounded in shape. It is 121 feet high, and the top is grass covered. Wislow Island stands out prominently against the low background and is a good landmark during low visibility. Anchorage in 14 fathoms

may be found 0.5 mile NE from Wislow Island, with some shelter from SE weather. There are depths of 2 to 3 fathoms S of Wislow Island, but no shelter in N weather, and the shape of the bay apparently concentrates the effect of any N swell, so that it breaks well off the shore at the head of the bay.

(291) The channel W of Wislow Island is blocked by a detached, rocky shoal, marked by kelp, with a depth of 1¼ fathoms, lying 350 yards W from the S end of Wislow Island.

(292) **Cape Wislow,** 2.5 miles W of Cape Cheerful, is dominated by **Mount Marshall Reese,** 2,545 feet high. This peak is at the N end of the long ridge which parallels the low valley that extends inland from Reese Bay. The land slopes gradually and evenly from Mount Marshall Reese to the end of Cape Wislow where it terminates in a bluff about 600 feet high.

(293) SW of Cape Wislow, about 1 and 3 miles, respectively, are two remarkable rocky cliffs about 2,000 feet high. They appear as equilateral triangles from the NW. A small triangular bluff, 560 feet high, is between them. Several large waterfalls emerge from the gullies between these bluffs; the most prominent of the waterfalls is about 1.7 miles W of Cape Wislow. Emerging from a V-shaped gully, the water makes a vertical drop of 139 feet to the high-water line. Being a spray of white foamy water, it is visible against the dark rocky cliff for some distance, and makes a good landmark when viewed from the NE.

(294) **Irishmans Hat,** a square tower rock 85 feet high, is about 0.2 mile offshore from the foot of the W cliff 3 miles SW of Cape Wislow. This rock can seldom be identified from any direction except NE where it shows clear of the land. Irishmans Hat is surrounded by a kelp-covered reef.

(295) **Driftwood Bay,** just W of Irishmans Hat and about 6 miles W from Cape Cheerful, is an open bight, with a sand and gravel beach at its head. The lowland inshore from the bay is a large, swampy valley covered with marsh grass. The lowland to the S, separating the mountainous mass of Makushin Volcano from the highland in the vicinity of Mount Marshall Reese, often can be recognized from offshore when the mountains are in clouds.

(296) Anchorage with some shelter from SW and SE weather can be found in 11 fathoms 0.5 mile from the W shore, with Point Tebenkof bearing about 275°. The depths shoal rapidly towards the head of the bay, and depths of 3 fathoms and less are found 600 yards offshore near the SE part of the bay.

(297) **Point Tebenkof,** the W point of Driftwood Bay, is probably the most readily identifiable of any of the points along this stretch of coast, especially from the SW. The point terminates in a grassy bluff 800 to 1,000 feet high which overlooks the points to the SW.

(298) From Point Tebenkof the land rises gradually and evenly to a flat-topped peak or ridge 3,505 feet high, 2.8 miles inland. From the SW this ridge is seen on the skyline as a straight line slightly inclined to the horizon and terminating at the inshore end in a smoothly rounded peak which is a spur from the higher land about Makushin Volcano.

(299) **Red Cinder Dome,** 1,874 feet high, is 1.1 miles S of Point Tebenkof and to the E of the ridge. This crater peak shows over the ridge to the W as a flat-topped hump appearing as a part of this ridge. It is a useful landmark because it is often clear when all other peaks are obscured. It can be identified readily from NE as it shows clear over the lower land at the head of Driftwood Bay, while all other points and landmarks merge with the higher land in the background.

(300) Point Tebenkof should be given a berth of at least 0.5 mile. Two rocks awash at high water are 200 yards offshore about 0.4 mile W of the point, and a 2¼-fathoms shoal, marked by heavy kelp, is 375 yards offshore, outside of the rocks awash.

(301) A large slide 1.3 miles W of Point Tebenkof may be identified under certain conditions of light. The bare place has the shape of an enormous keyhole, about 600 feet high.

(302) **Bishop Point** is a level tablelike projection, 254 feet high, about 3 miles SW from Point Tebenkof. It terminates in a pinnacle 102 feet high. A deep gorge extends 3.5 miles S from the point. Cascades are visible in summer high up on the walls of this gorge.

(303) Temporary anchorage in S weather may be found 0.4 mile from shore in about 16 fathoms 1 mile ENE from Bishop Point or 0.5 mile WSW from it.

(304) Two large waterfalls, one of which is divided into two cascades about 100 feet high, are 1.6 miles SW from Bishop Point, and are visible to the N and NE.

(305) **Koriga Point,** 5 miles SW of Point Tebenkof, is about 140 feet high and is difficult to distinguish except from the SW. There are a number of rocky islets close to shore E and W of the point. Deep water, 40 fathoms, is found within 0.3 mile of the point.

(306) A round hill, 320 feet high, is about 0.8 mile SW of Koriga Point, and can be identified from the SW when it is clear of Point Tebenkof but is difficult to distinguish when seen against the higher land.

(307) The shore SW of Koriga Point is composed of rocky bluffs 100 to 300 feet high. A small cove, with a sandy beach, 1.8 miles SW of the point, has depths of less than 5 fathoms, and the E part of the cove is obstructed by rocks and kelp.

(308) **Point Kadin,** 3 miles SW of Koriga Point, is an inconspicuous, rounding section of the NW coast of Unalaska Island. A group of rocks 18 feet high are 250 yards off the cape. About 0.4 mile SW is another group of rocks 7 feet high, 350 yards offshore from a waterfall about 60 feet high, visible only from the N. Extending NW and W more than 0.5 mile from these rocks is a rocky bank with depths from 5¼ to 8 fathoms, while depths of 11 fathoms are found about 1 mile W. Tide rips occur in this vicinity, and in heavy weather the seas are perceptibly heavier. It is recommended that Point Kadin be given a wide berth, especially in bad weather.

(309) **Makushin Volcano,** 6,680 feet high, is a flat-topped snow-covered mass with several jagged peaks of about the same elevation surrounding it. It can easily be identified when not covered by clouds. The westernmost of these jagged peaks is particularly sharp and distinct and has an elevation of 5,242 feet. A large glacier covers the entire top of the peak and extends down into the large valleys at its base. Faint clouds of vapor steam from the NE end of the snow field may be visible.

(310) **Cape Kovrizhka,** 5 miles SW of Point Kadin, is very prominent and easily distinguished by the dome-shaped rocky hill, 233 feet high, that forms its westernmost extremity. Numerous rocks are found around this cape, and it should be given a berth of 1 mile. Under certain combinations of wind and current comparatively heavy tide rips occur in the vicinity of the cape.

(311) **Round Top,** about 1 mile inland at Cape Kovrizhka, is a massive, round-topped peak, 2,452 feet high, separated from the peaks surrounding Makushin Volcano and higher than any of the nearby peaks. It is a useful landmark.

(312) On the N side of Cape Kovrizhka is a small open bay which affords a temporary anchorage during moderate SE

weather. Differences from normal magnetic variation of as much as 3° have been observed at the cape.

(313) **Chart 16517.–Volcano Bay,** immediately S and E of Cape Kovrizhka, is small and open to the W and S, forming a fair anchorage for E weather. However, strong winds are to be expected, and with winds shifting to the S and W the bay becomes quite rough and dangerous for small craft.

(314) **Makushin Bay,** indenting the W side of Unalaska Island, is 2.5 miles wide at the entrance and extends in an E direction for 5 miles to the entrance of Anderson, Cannery, and Portage Bays.

(315) **Makushin Point,** on the N side of the entrance to Makushin Bay, rises to 762 feet and is grass covered. It is made prominent by a number of small knolls scattered over its top. Just N of the point there is a low valley that extends from Makushin Bay to Volcano Bay.

(316) The abandoned village of **Makushin** is on the E side of Makushin Point. Water is obtainable from a stream nearby.

(317) The N side of the entrance to Makushin Bay is marked by **Rock Islet,** 104 feet high, 0.5 mile SW of Makushin Point, with several rocks between it and the point. There are no known dangers if the S shore is given a clearance of at least 0.3 mile. An abrupt shoal, with least depth of 16 fathoms is 1.2 miles SW from Rock Islet.

(318) A prevailing current sets in a N direction off Makushin Bay. The combined effect of the currents, including tidal currents, and winds causes a very noticeable choppy sea with attending tide rips across the entrance of the bay.

(319) Vessels have anchored in 15 fathoms, mud bottom, about 0.3 mile off the beach in the cove E of Makushin Point with **Priest Rock,** 80 feet high just S of the abandoned village, bearing 230°. This anchorage is good for W and N weather, but with S weather considerable swell makes in, and in E weather, it becomes quite rough.

(320) **Humpback Bay,** on the NE side of Makushin Bay, offers good anchorage for large vessels in all but W weather. Enter the bay from the SW on a course of 055°, keeping Cathedral Rocks about 600 yards to starboard. Anchorage can be had in 25 to 47 fathoms, mud bottom.

(321) **Anderson Bay,** the S arm of Makushin Bay, affords several good anchorages of moderate size and at least one anchorage for one or more larger ships. A gravel spit, forming **Tarasof Point,** on the W side of the entrance, is a distinctive feature. The bay extends about 6 miles in a SE direction and terminates in two arms, **Naginak Cove** on the W and **Udamak Cove** on the E, with wedge-shaped **Iksiak Point** between them. Four well-rounded, grass-covered islands are in the E half of the bay. These islands are well apart from one another; **Peter Island,** the northernmost, is near **Anderson Point,** the E entrance point of the bay, and the southernmost is well inside the entrance to Udamak Cove.

(322) Anchorage in Anderson Bay is in 20 fathoms, mud bottom, in a bight between the second island from the N and the main shore. The anchorage in Naginak Cove is in a mud bottom N of the narrow pass formed by two opposing points. The pass is about 1.2 miles from Iksiak Point, and is obstructed by a dangerous 1½-fathom shoal in midchannel. Anchorage in Udamak Cove is E of the fourth island in 22 fathoms, mud bottom, on a ridge that extends from the middle of the island to the main E shore.

(323) **Cannery Bay,** 1 mile to the E of Anderson Bay, extends about 3 miles in a SE and E direction. Near the head and on the S side of the bay is an abandoned wharf and cannery. The only anchorage in the bay is at the E end, about 0.4 mile NE of the abandoned cannery in 15 to 17 fathoms, soft bottom.

(324) **Portage Bay** extends about 4 miles in an E direction from **Cannery Point.** Two shoals, with least depths of 5¾ and 6½ fathoms, are almost in midentrance. Indifferent anchorage for small vessels may be had in 19 fathoms, sticky bottom, midway between the N shore and the 1½-fathom shoal and rocks near the head of the bay.

(325) A trail to Unalaska begins at the prominent valley about 1 mile from the head and on the N side of Portage Bay. The trip to Unalaska takes about 8 hours.

(326) **Cape Starichkof,** forming the S entrance point to Makushin Bay, is marked by an off-lying rock 27 feet high. Numerous rocks, covered and awash, are found along the shore in this vicinity, but are not known to extend more than 0.3 mile from the beach. The mountains rise abruptly from the beach in this vicinity to 1,600 feet.

(327) Two miles S of Cape Starichkof is a deep narrow valley, trending E. Convenient anchorage in SE weather can be found 0.5 mile from shore off this valley in about 20 fathoms, with the center of the valley bearing about 110° and a conspicuous small 4-foot rock, 150 yards off the shore at the S edge of the valley, bearing about 150°. Launches can find more shelter by anchoring closer to shore. A small bank with least depth of 6¼ fathoms is 450 yards W of the rock previously mentioned.

(328) **Skan Bay,** on the W side of Unalaska Island, has its NE entrance point at the ledge 2 miles S of Cape Starichkof. It is 2 miles wide at the entrance and extends about 4 miles in a SE direction.

(329) A bank, with a least depth of 3¾ fathoms, is in the bay entrance, 1.4 miles 205° from the point on the NE side and 0.8 mile N of the SW entrance point.

(330) The two arms at the head of Skan Bay are separated by **Skan Point,** a high headland. The E arm is too deep for convenient anchorage. The entrance to the S arm is about 0.4 mile wide and choked with heavy kelp, but has a least depth of about 5 fathoms in midchannel. This arm extends over 1 mile to the S, has depths over 30 fathoms, and provides good shelter from all directions; but the depth is too great in that the length of anchor cable required would not allow sufficient swinging room.

(331) The survey ship used an anchorage just inside the SW entrance point of Skan Bay, a little less than 0.5 mile from shore in 15 fathoms, where some shelter from W weather was found.

(332) **Chart 16515.–Spray Cape,** about 3 miles W of the SW entrance point of Skan Bay, is conspicuous from the N. A small islet, about 80 feet high, is close to shore off its NW side, and rocks covered at high water extend SW from this point.

(333) The shore between Skan Bay and Spray Cape is fringed with pinnacle rocks and islets, and a bank, covered 6¾ fathoms at its outer edge, extends more than 0.5 mile offshore.

(334) From Spray Cape the shore trends S for 3.5 miles to the entrance of Pumicestone Bay. It is high and steep, fringed by rocks. An anchorage with good shelter in SE weather can be found 0.4 mile from shore at the entrance to Pumicestone Bay in 20 fathoms off a small bight.

(335) **Pumicestone Bay,** on the NW side of the long W extension of Unalaska Island, is 1.5 miles wide at the entrance, but narrows rapidly to less than 0.5 mile. The bay extends about 7 miles in an E direction with an abrupt S-turn to the N and E about

4 miles from the entrance. The turn is partially blocked by a small flat-topped island about 30 yards in extent and 36 feet high, leaving a clear channel 300 yards wide.

(336) The N shore of Pumicestone Bay is formed by low, grass-covered hills. The shore is extremely rocky and rugged, the bluffs having a general elevation of 50 feet. The S shore is almost vertical and is characterized by many slides. The bay is divided by the turn into an outer and an inner bay. The inner bay is almost surrounded by high, precipitous mountains, except at the head where the mountains recede from the shore, leaving a narrow, flat grassland some 200 to 400 yards in width.

(337) Two large streams flow into the bay, one on the NE and the other at the S side of the head of the bay. At the turn of Pumicestone Bay is a strip of shingle beach on the E side, backed by a narrow strip of grassland, that extends to the high bluffs in back of it. A conspicuous waterfall about 800 feet high is at the S end of the beach.

(338) The outer bay is very deep. The water shoals gradually from over 40 fathoms at the entrance to less than 30 fathoms at the turn. There is little shoal water suitable for anchorage, and no protection from W weather.

(339) At the head, the inner bay widens forming a basin 0.5 mile in diameter where good anchorage may be found in 20 fathoms or less. The SE part of this basin shoals abruptly from 10 fathoms to less than 1 fathom.

(340) **Kashega Point,** on the S side of the entrance to Pumicestone Bay, is 1,447 feet high and deep water is found close to its N shore.

(341) About 1.5 miles S of Kashega Point is a bold rocky island about 80 feet high, 600 yards from shore. **McIver Bight,** about 1 mile in diameter, indents the shore E of this island. Good anchorage can be found in the center of the bay in about 10 fathoms with the island bearing W. The bay is exposed to the W and NW, but small boats can find some shelter from W weather by anchoring closer to shore. The SE part of the bay has depths of 2 to 4 fathoms.

(342) **Kashega Bay** is on the NW side of the long W extension of Unalaska Island and about 25 miles from Umnak Pass. At the SW side of the entrance is **Buck Island,** low and grassy. About 1.5 miles NW of Buck Island is a narrow rocky ledge that extends NW about 0.4 mile on which are the two conspicuous **Kashega Pinnacles.** The outer one is about 95 feet high, the inner one about 35 feet high. These pinnacles are the most conspicuous landmarks in approaching the bay. About 0.3 mile NW of the higher pinnacle is a small rock 5 feet high.

(343) The bay has a navigable entrance 0.5 mile wide and is about 1.5 miles long in a SE direction. **Kashega,** a small village at the SE end, has a school, church, sheep-ranch buildings, and a few houses. The village shows seaward through a small angle and then is not visible until arriving well inside the bay. Neither a post office nor supplies are available. The anchorage in the bay is exposed to the NW and the holding bottom is reported none too good. In proceeding to the anchorage, favor the N shore to avoid a kelp-marked 2¼-fathom shoal 250 yards from the S shore and 0.5 mile NW of the village church; anchor in 6 fathoms with the church bearing about 165°.

(344) The valley at the head of Kashega Bay leads to Kuliliak Bay on the Pacific Ocean side of Unalaska Island. It is about 4 miles long and 1 mile wide, and extends in an E-W direction. The floor of this valley is covered with freshwater lagoons which are fed by small streams. The sides of the valley are bounded by high hills entirely covered with grass. The hills to the N are rolling, while to the S they are steep with a jagged skyline. The streams which empty from the lagoons into Kashega Bay are shallow at their mouths. Local residents of Kashega village report that during heavy NW weather the tide backs up into the lagoons. The shores of the lagoons are mostly rocky with very few stretches of sand beach.

(345) Just W of Kashega Bay is **Buck Bight.** It is clear, except near the head. The bight is open to the N.

(346) **Sedanka Point,** 175 feet high, is the W extremity of the ridge bordering the S side of Kashega Bay. A conspicuous rocky pinnacle, 43 feet high, is 1.5 miles NW of the point of the cape with a smaller pinnacle 200 yards to the SE. A long ledge extends toward the pinnacles from the point and a conspicuous flat-topped islet, 105 feet high, is 0.3 mile off the point.

(347) **Kismaliuk Bay** is an irregular-shaped bay that extends roughly SE for 2 miles, then branching into two arms. The arms are separated by a low broad point from which a chain of bare rocky islets extend about 0.5 mile in a NW direction. The outer islet is 20 feet high.

(348) The N arm is of little importance and affords little protection from NW weather. The depth shoals gradually from 17 fathoms at the entrance.

(349) The S arm, protected by the chain of islets, affords excellent protection. The entrance channel is clear and about 500 yards wide, with a midchannel depth of 11 fathoms. The water shoals gradually to the head of the arm.

(350) **Alimuda Bay** is the long bay immediately W of Kismaliuk Bay and separated from it by **Manning Point,** a bold, blunt, precipitous point of land from which an exposed rock ledge makes out some 400 yards in a NW direction. The bay extends about 3.5 miles SE, with a width at the entrance of over 1.5 miles.

(351) The water shoals gradually from 20 fathoms at the entrance to the gravel beach at the head. About 1 mile inside the entrance a low, flat, reef, with several exposed rocks, makes out some 300 yards from a point on the E shore. About 1 mile farther inside, shoal water, that extends some 600 yards off the same shore, has a least depth of 1½ fathoms. A bar, covered 4¾ fathoms, extends SW across the bay about 0.7 mile from the head. Between this bar and the head of the bay, a depth of 8 fathoms is found, where small vessels can anchor. As this bar is exposed to all N and W weather, large swells rolling over it, often breaking there, reform to pile up in breakers at the head of the bay. This bay affords no real protection for any but small boats and then only in the extreme SE bend behind a small reef making out from the SE shore.

(352) **Wedge Point,** a bold narrow ridge having remarkable serrations, separates Alimuda and Aspid Bays. **Aspid Bay** extends about 2.2 miles in a S direction and affords little protection from N and NW weather. The depth at the entrance is about 15 fathoms; from there the water shoals gradually to the head of the bay. The bottom is good for anchoring in 9 to 10 fathoms.

(353) **Cape Aspid,** on the N side of Unalaska Island about 15 miles from its W extremity at Umnak Pass, has a conical hilltop, 901 feet high, near its outer end. The shape of the hill, terminating in bluffs at the shore, is unlike any other land in the vicinity, as all the adjoining hills are flat topped with comparatively gentle slopes. The cape is a useful landmark from all directions except N where the hill merges with the higher land to the S. A ledge ex-

tends about 400 yards offshore, terminating in an islet about 24 feet high.

(354) The wide bight SW of Cape Aspid affords shelter in E and S weather in 12 to 15 fathoms, 0.4 mile from shore. A 4¾-fathom spot, marked by kelp, is 0.6 mile NE of Ram Point and about 0.4 mile from shore.

(355) At some distance off the coast, between Capes Aspid and Spray, the currents vary in intensity from little or nothing off Spray Cape to about 1 knot off Cape Aspid. The current generally sets E, the flood being stronger than the ebb. Farther inshore, at Cape Aspid, the currents are stronger and small tide rips appear at the turn of the current. These rips extend as far E as Sedanka Point.

(356) **Chart 16516.–Ram Point,** 2.7 miles SW of Cape Aspid, is a prominent wedge-shaped rock 240 feet high. Ledges, bare at low water, extend 0.2 mile offshore from the point. To the W of the point there is a stretch of low land over which the masts of vessels anchored in Chernofski Harbor are visible from offshore.

(357) **Chernofski Point,** the E entrance point of Chernofski Harbor, is the extremity of a narrow peninsula composed of several hills, the highest being 315 feet. The seaward face of the peninsula is rugged and broken and there are rocks that extend seaward on the line of the ridge. A deep, wide cleft across the middle of this peninsula may be identified when bearing S of SE.

(358) Several small detached banks, covered 10 to 12 fathoms, surrounded by deeper water are to the N of Chernofski Point.

(359) **Chernofski Harbor** is a small, land-locked harbor that in its inner part affords complete shelter from swell and from winds except williwaws. Depths are suitable for anchorage; bottom is mud. With heavy S and SE winds the harbor experiences a strong sweep from the valleys at the head. the entrance between Chernofski Point and **West Point** is through a narrow canal formed by low promontories, about 4 miles SW of Cape Aspid.

(360) The entrance to Chernofski Harbor is difficult as there are no conspicuous landmarks. From the entrance, the NE tangent of Umnak Island (Cape Idak) bears 309° (see chart 16500). Wedge-shaped Ram Point, about 1 mile E of Chernofski Point, may help to identify the locality. A shoal with a least depth of 5½ fathoms is almost in the middle of the entrance, about 900 yards SW of Chernofski Point. A midchannel course should be followed into the harbor because of the projecting ledges that extend on both sides. Anchorage can be had in the middle of **Mutton Cove** in 10 to 12 fathoms, mud bottom.

(361) A large pier is on the NE side of the cove; a smaller pier is on the SW side.

(362) Water can be obtained from a stream in the S part of the bay. The head of the bay, at the SE end, is shallow and can be used only by small boats.

(363) The N coast of Unalaska Island W of Chernofski Harbor is described in connection with Umnak Pass.

(364) **Chart 16522.–Sedanka Island,** close to the E end of Unalaska Island on the Pacific side and separated from the latter island by narrow, deep Udagak Strait, appears as a part of Unalaska Island. The island is mountainous and covered with tundra. There are numerous peaks, separated by deep valleys, running NW, but none of the peaks are conspicuous from E. The highest peak, 2,130 feet, is in the SW part of the island. The outer coast is broken by bays and coves separated by bold, rocky headlands.

(365) **Cape Sedanka,** the E point of the island, terminates in a knoll 375 feet high. Rocks and islets fringe the shore, but deep water is found at a distance of 400 yards. The coast on the SE side of the cape is unusually steep and reaches an elevation of 1,269 feet.

(366) **Egg Island** is 0.6 mile in diameter, 541 feet high, and is about 1.5 miles NE from Cape Sedanka. It is a grassy island with a bluff rocky shore, and has numerous rocks and islets within 200 yards of the shore, but beyond this distance deep water is found all around the island.

(367) **Old Man Rocks,** a group of four, two of which are prominent, are 0.9 mile NW of Egg Island. The two conspicuous rocks are 100 and 39 feet high. The group is surrounded by deep water at a distance of 200 yards.

(368) **Sedanka Pass** separates Egg Island and Old Man Rocks from Sedanka Island. It is about 1.5 miles wide and has depths of 30 to 40 fathoms. The Sedanka Island shore should be given a berth of 0.5 mile. Strong currents with rips are experienced occasionally around Cape Sedanka and just S of Old Man Rocks.

(369) **The Signals** are three rocks off the E coast of Sedanka Island. **Outer Signal,** 30 feet high, is 3.2 miles S of Egg Island and has a small rock, 10 feet high, 0.3 mile SE of it. Deep water is found close to these rocks. **Inner Signal** is 3 miles S of Cape Sedanka and 0.8 mile off the nearest Sedanka Island shore; it is 126 feet high and is surrounded by a shoal and reef area 0.4 mile in diameter. A bar, covered 7 to 8 fathoms reaches from this area to the nearest point of Sedanka Island. The passage between the Inner and Outer Signals is clear.

(370) About 15 miles SE of Egg Island (see chart 16520), after gradual shoaling from the 100-fathom curve to about 45 fathoms, the water deepens to over 60 fathoms, forming an underwater basin about 6 miles wide that leads NW into Beaver Inlet, furnishing an excellent pathway for vessels equipped with echo sounding apparatus. A crescent-shaped bank of rock formation within the basin of deep water and 2 miles E of Egg Island has general depths of 12 to 14 fathoms and a least depth of 9 fathoms on the W part of the bank. The 50-fathom curve surrounding the bank approximates a circle about 1.5 miles in diameter.

(371) When navigating on soundings in thick weather this bank and the characteristic deep water afford an opportunity to check a vessel's position. The navigator in finding his way on soundings to the bank must guard against the mischance of nearing Egg Island; the shoaling of the depths in doing so may mislead him in assuming that he is approaching the bank. A definite knowledge from soundings taken regularly along the course from seaward is necessary to avoid this error.

(372) From Cape Sedanka the shore on the Pacific side trends SW for 3 miles, then turns SE for 1 mile to a precipitous point, enclosing a small bight where temporary anchorage in W weather can be found. A depth of 7 fathoms is 0.5 mile from shore in the SW part of the bight. The bottom of fine gray sand slopes gradually from the sand beach at the head of the bight to the 20-fathom curve 1 mile offshore. To enter the bight, pass midway between Outer Signal and Egg Island.

(373) On the SE side of Sedanka Island, E of Udagak Strait, are three bays separated by bold headlands; the largest bay is 4 miles NE of the entrance to Udagak Strait and extends 2 miles inland in a NW direction. Good anchorage may be found 0.5 mile from the head of the bay in 7 fathoms. This bay is protected from all except SE weather. The two other bays, that are nearer Udagak Strait, afford protection from the N and W.

(374) The S end of Sedanka Island is a double point. On the E prong is a conspicuous sharp pinnacle rising about 100 feet from a flat ledge.

(375) **Udagak Strait,** between Sedanka and Unalaska Islands, provides a direct passage from the Pacific Ocean to Beaver Inlet. Foul ground extends 300 yards from the W shore of the strait at the entrance, but a midchannel course clears this ground. The narrows at the halfway point in Udagak Strait have a width of 0.25 mile, and the channel is slightly over 0.1 mile wide in a depth over 10 fathoms.

(376) The current velocity is about 2 knots on the flood and about 1 knot on the ebb. At the S entrance of the strait and through the narrows the flood sets from the Pacific. (See the Tidal Current Tables for current predictions.)

(377) The strait has good water throughout. However, in the narrows, which run E and W, the channel turns around a reef on the S side of the E end, and then in a reverse turn passes around a rocky shoal on the N side at the W end. The reef is off the NE side of a broad gravel spit that forms the S side of the narrows. The reef is marked by kelp and rocks awash at three points. One or more of the rocks are generally visible. The rocky shoal has a least depth of 3¼ fathoms and extends 200 yards from the S side of a pointed, gravel spit which forms the W end of the N side of the narrows. The currents in the narrows necessitate caution as to their sheering effect on a vessel swinging to avoid the dangers. Anchorage in the S entrance of the strait is uncomfortable because of the current.

(378) **Udagak Bay,** an indentation in the W shore of Udagak Strait, affords anchorage in 12 to 19 fathoms, sand and mud bottom, about 0.3 to 0.4 mile from the head of the bay. Small boats may anchor in 6 to 10 fathoms, mud bottom, farther toward the head. The bay affords good protection in any weather.

(379) Light tide rips were frequently observed in the area off the mouth of Udagak Bay, sometimes they extended well into the bay. These rips usually occurred when the wind was contrary to the current. Numerous swirls were also encountered in the same area at all times when the currents were more than 1 knot.

(380) **Beaver Inlet** has its entrance between Brundage Head and Cape Sedanka and extends 17 miles SW into the E end of Unalaska Island. It has an average width of about 3 miles in its outer reaches, narrowing to about 1.6 miles near its head. The deep water in the bay extends E between Unalga and Egg Islands, making access to the inlet comparatively easy for a vessel equipped with echo sounding apparatus.

(381) Currents in Beaver Inlet are negligible, and in the entrance between Egg and Unalga Islands will not ordinarily exceed 2 knots.

(382) **Local magnetic disturbance.**–Differences of as much as 4° from the normal variation have been observed on Round Island and as much as 3° on the N shore of Erskine Bay.

(383) From Cape Sedanka, the SE entrance point of Beaver Inlet, the shore trends NW for 1.6 miles to a point marked by a small natural arch and having a chain of rocky islets that extend N about 200 yards. Just W of this point is an open bight, 1 mile wide and 0.4 mile long, which furnishes convenient temporary anchorage in S weather, well out of any swell. Anchor in the middle of the bight about 0.3 mile from shore, with Old Man Rocks showing between the rocky islets off the point to the E, in about 16 fathoms. Smaller boats can move farther into lesser depths near the W end of the bight.

(384) **Sisek Cove,** about 4 miles SW from Old Man Rocks, is too deep for anchorage.

(385) **Udamat Bay** makes into Sedanka Island from Beaver Inlet 5.5 miles SW from Old Man Rocks and just W of **Biorka,** a small native settlement having a conspicuous church. The bay is 1 mile wide to a point 0.8 mile from its head where it narrows to 0.3 mile. A low valley extends SE from the head of the bay to the outer coast. About 1.4 miles S of the E entrance point, a reef makes out 200 yards from the E shore. With this exception the shores are clear, and a depth of 20 fathoms will be found within 250 yards or less of the shore. If necessary to anchor in the bay, the best places are at the head of the bay or just N of the reef, mentioned above, in a small bight indenting the E shore, but there will be scant swinging room. A small rocky patch, covered 15 to 25 fathoms, is 0.4 mile NW from the same reef, and may offer anchorage with more swinging room.

(386) **Strait Bay,** about 8 miles SW from Old Man Rocks, is 1.1 miles long, tapering from 1 mile wide at its entrance to 0.4 mile wide near the head. The bay is clear except for a 5½-fathom spot in the center. Anchorage may be had at the head of the bay in 20 fathoms about 250 yards from shore. A valley extends S and E from its head and during a blow the wind is funneled into the bay through this valley.

(387) **Amugul Bay** makes S from Beaver Inlet about 3 miles SW of the entrance to Udagak Strait. **Round Island,** 136 feet high, marks the E side of Amugul Bay entrance. The bay affords fair anchorage for medium-sized craft in 22 fathoms, mud bottom, 0.2 mile from the head of the W bight. The S arm affords excellent anchorage for small craft in 10 fathoms, mud bottom, 0.1 mile from the head.

(388) At the head of Beaver Inlet are four small bays; named in order, following the S shore around to the N shore, they are: **Tanaskan Bay, Final Bay, Kisselen Bay,** and **Erskine Bay.** Temporary anchorage only can be found near the heads of these bays for medium-sized craft. The small bight on the S side of Kisselen Bay affords excellent anchorage for small craft in 5 fathoms, mud bottom, 0.1 mile from the head. In approaching this anchorage, care should be taken to avoid a reef, which uncovers 1 foot, 160 yards S of the S island of a group of four. In Final Bay are heavy williwaws and a strong draw.

(389) **Dushkot Island** is along the N shore of Beaver Inlet near the head.

(390) **Uniktali Bay** makes into the N shore of Beaver Inlet about 15 miles above its entrance. This bay is nearly 3 miles long in a W direction and 0.3 mile wide at its narrowest part near its head. An anchorage, practically landlocked, but limited to medium-sized vessels, may be found in 20 fathoms, muddy bottom, 0.5 mile from the head of Uniktali Bay. In entering, keep to midbay as far as the narrows, then favor the S shore to avoid a 6-fathom shoal that is 260 yards off the N shore.

(391) **Small Bay,** E of Uniktali Bay, affords good anchorage in 10 fathoms, 0.3 mile from the head.

(392) **Ugadaga Bay** is an indentation in the N shore of Beaver Inlet 8 miles above the entrance. From the head of Ugadaga Bay a trail leads to Unalaska. Fair anchorage may be found 0.4 mile from the head of the bay in 20 fathoms, even bottom.

(393) **Agamgik Bay,** indenting the N shore of Beaver Inlet, 5.5 miles SW of its entrance, offers anchorage in good holding ground with fair shelter, except in severe SE weather. The bay is 1.2 miles wide at the entrance. Opposite a small rocky peninsula jutting out from the W side about 1.4 miles from the W entrance

point, the width is reduced to 0.4 mile. The anchorage is in this narrow portion in 16 to 20 fathoms. The bay is comparatively free from williwaws.

(394) **Eagle Rock,** a large, flat-topped pinnacle 75 feet high, is 125 yards off the rounded point on the E side of the entrance to Agamgik Bay. Off the W point of the entrance, covered rocks and rocks awash extend from 0.1 to 0.3 mile into the entrance. A rock, 6 feet high, is outside of this rocky area and 600 yards E of the point.

(395) The N shore of Beaver Inlet (see chart 16528) extends E from the E entrance point of Agamgik Bay for almost 3 miles to the W entrance point of Deep Bay, where it turns sharply to the N and NW for 1.2 miles, forming the W shore of Deep Bay, which has been described earlier with Unalga Pass. About halfway between the two bays is a conspicuous waterfall, 350 feet high, with a pinnacle rock 40 feet high just to the W of its base.

(396) The gap between the mountains on either side of the S part of Udagak Strait stands out in a measure, from a SE direction, against a background of mountains on the W side of the N end of the strait. The 1.5-mile stretch of shore forming the S entrance of the strait on the Unalaska Island side is at the base of a very steep side of a ridge, the summit of which is 1,920 feet high.

(397) Mountain ridges just W of Udagak Strait are normal to the trend of the outer coast, generally ending in deeply eroded cliffs. The mountains appear in confusion and can be identified only by a close study of the chart.

(398) With the exception of Outer Signal, Inner Signal, the reef off Reef Point, and the rocks and ledges close to shore, the S coasts of Sedanka Island and Unalaska Island, as far W as Eagle Point, are free from outlying dangers.

(399) Between Udagak Strait and Kayak Cape the valleys between the headlands have been partially filled with debris, forming a series of bights with shingle beaches at their heads. Behind these beaches are grassy flats and, in most cases, lagoons. The headlands between the bights protrude from the generally high mountain mass. The valleys, with the exception of one that leads through a mountain pass to the head of one of the bays of Beaver Inlet, are in the form of amphitheaters. Numerous rocks and ledges are within 50 to 100 yards from the shores and occasionally as far as 200 to 350 yards. The waters along the shoreline are generally foul with covered and bare boulders.

(400) **Hive Bay,** about 5 miles SW of Udagak Strait, is the largest of these bights, its two arms affording good protection from N weather. The W arm of the bay affords good anchorage in 8 to 10 fathoms with generally good holding ground. A rock that uncovers 3 feet is on the W side of the entrance to the E arm of Hive Bay. The headland between the two arms is recessive and undistinguished. The headland W of Hive Bay is deeply eroded. It has sharp ridges and three closely spaced summits of nearly equal elevation, with successively lower spurs toward the point. The cliffs are marked by narrow dark strata rising toward the point. The W side of this headland has a very conspicuous boulder slide.

(401) The bight just W of Hive Bay has a short stretch of shingle beach, behind which is a valley leading inland over gentle slopes to a mountain pass with an estimated elevation of 400 feet. Beyond the pass is Tanaskan Bay, an arm of Beaver Inlet. The headland forming the W side of this bight has a reddish cliff, particularly noticeable from the SW.

(402) **Staraya Bay,** N of Kayak Cape, is divided into two parts by a bold promontory on which the remnants of volcanic craters are easily seen. Near the outer end of the headland forming the E side of the N arm of the bay is a natural rock bridge arching from the cliff and footing in the shallow water near the shore. This span is about 50 feet, and the height under the arch is about the same. Ledges extend about 200 yards offshore from the outer end of this headland. The W arm of Staraya Bay is a bight which has a shingle beach of unusual length and height, 20 to 25 feet, and a large lagoon behind the beach. In the center of the mouth of this bight is a shoal area with a 1-fathom rock.

(403) **Kayak Cape** is the first prominent point W of Udagak Strait. It is lower than points to the W, bold at the extremity and its narrow ridge is marked by several prominent humps, 1,000 to 1,400 feet high. Both sides of the cape display a conspicuous black stratum about 400 feet high at the point of the cape. These strata may be seen when the overcast is not too low.

(404) **Chart 16521.**–From Kayak Cape W the shoreline trends to the SW and is deeply indented by several large bays, affording various degrees of protection. Only two of these, Usof Bay and Blueberry Bay, are considered to give adequate protection from all kinds of weather. Raven Bay is landlocked at the head and gives excellent protection for small craft.

(405) **Protection Bay,** just W of Kayak Cape, extends about 2 miles inland. There is a slight hook to the W at the head of the bay, giving some protection for small craft from the S. Rocks extend 500 yards SE off the point of the hook. This bay has the least shelter of any in the vicinity, but its depth is more convenient for anchoring.

(406) **Cape Yanaliuk,** about 4 miles SW of Kayak Cape, is easily identified by the mushroom-shaped rock just off the point. Altogether there are two small rock islets just off this point. The cape is narrow and precipitous except for a short distance on the SW side, which is a grass-covered slope, topped and flanked at each end by rock cliffs. The cape has a markedly jagged appearance. A small bight on the E side of the cape extends 1 mile inland but affords no protection in bad weather.

(407) **Three Island Bay,** W of Cape Yanaliuk, extends inland for about 5 miles in a NNW direction; it affords fair protection for small craft in any weather in 8 to 15 fathoms at the head of the bay, behind three small islands which give the bay its name. Deep water carries through to the head of the bay between the islands. Care must be exercised not to anchor too close to the rocks N of the E island, nor to the shoal water at the N end of the bay. Swinging room is restricted for vessels exceeding 100 feet in length, and the area affords only fair anchorage and protection for small craft. It is subject to violent williwaws, and in S weather a rather heavy swell from outside makes it uncomfortable. **Foam Cove,** 1 mile above the W entrance point, provides fair temporary anchorage near the mouth of a stream which shows conspicuously from the bay entrance.

(408) **Blueberry Bay,** the next bay W of Three Island Bay, extends inland in a NW direction for about 3 miles. A fairly sharp turn to the N for about 1 mile makes the head of the bay landlocked and affords good shelter. The upper half of Blueberry Bay has a rugged shoreline characterized by narrow gravel and boulder beaches, or rocky shoreline with smooth rock slopes. Anchorage may be had in 15 to 20 fathoms in the middle of Blueberry Bay about 0.5 mile below the head in good holding bottom. The swinging room is entirely adequate for small craft and should suffice for ships of moderate size. Being entirely landlocked, there is almost entire freedom from swell. Winds are gen-

erally more moderate than in nearby localities and, as far as is known, never blow across the bay. Water is available.

(409) **Whalebone Cape** is characterized by a bare, rocky, 2,000-foot peak, that appears as a series of broken rust-colored cliffs from offshore. At the base of the mountain is a gray rockslide about 300 feet high. The foot of the slide extends to the high water line. The shore around the point of the cape is very rugged and broken, and dangerous for boat landings because of numerous rock islets, rocks awash, and covered rocks close inshore.

(410) **Usof Bay,** just W of Whalebone Cape, extends inland about 8 miles in a NNW direction and affords good anchorage at the head in 20 fathoms, sand bottom. The width of the bay narrows to 0.5 mile about 5 miles from the entrance and a slight turn to the N for about 1 mile makes the head of the bay landlocked. The general depth of the bay is over 60 fathoms. A small hanging glacier shows at the head of the bay over the W side of the narrows as seen from the entrance.

(411) Good anchorage for small craft is found in **Johnson Cove,** at the mouth of a canyon on the W side about 5 miles in from the entrance, in 7 to 10 fathoms, mud bottom. The S arm of Johnson Cove should be avoided as it is shallow and filled with rocks. To the N of the canyon is a conspicuous cascade.

(412) The shoreline of Usof Bay is rocky and precipitous except at the heads of several coves or bights which occur at irregular intervals. Thick, long grass covers the flats and ascends the mountains, in some cases covering the slopes as high as 2,000 feet. There are numerous rock islets offshore at short distances and irregular intervals. Kelp is general along the rocky shoreline. A strong W set of the current was noticed on the rising tide off the W side of the entrance to Usof Bay in 1939. This condition was noted by the survey party because it was generally taken for granted that the set is to the E on a rising tide. There is not sufficient proof that this condition exists on every rising tide.

(413) **Cape Prominence,** the W entrance point of Usof Bay, is marked by a tall cylindrical pinnacle connected at its base with the main point; it shows conspicuously from SSW. A flat ledge makes off 200 to 300 yards, and may be mistaken for the ledges off Reef Point.

(414) Another cylindrical rock is about 700 yards N on the E side of the cape. It is not so noticeable, but is an aid in identifying Cape Prominence. Breakers extend for about 500 yards off the cape.

(415) **Open Bay** is the bight between Cape Prominence and Reef Point. It has anchorage for large or small vessels in 20 to 5 fathoms with good holding ground and sufficient swinging room. It affords limited protection from the SW and E, but none from the S and SE.

(416) **Reef Point** is easily identified by a conspicuous cathedral rock, 240 feet high, just off the S extremity. A ledge, just a few feet above high water, extends 0.5 mile off the point. No dangers were noted outside of this ledge. All of this ledge is not above high water; the depth is 5 fathoms between the outer end and inner parts. The outer end is a reef which is continually awash, because of the ocean swell, at all stages of the tide, but may actually be 2 feet above low water.

(417) **Raven Bay,** on the W side of Reef Point, is entered on either side of **Ogangen Island** and extends 3.5 miles inland. The island, 1,180 feet high and 2 miles long by 0.5 mile wide, has its longer axis paralleling the W shore of the bay; the passage between is 0.2 to 0.4 mile wide and has depths of 9 to 15 fathoms.

(418) E of Ogangen Island, the bay narrows from a width of 2 miles at the entrance to 0.3 mile at the N end of the island; depths are 25 to 40 fathoms. NE of the island, **Crow Arm,** narrow and stocking-shaped, extends 1 mile to the N; the arm is too deep for the restricted swinging room and is subject to considerate swell during S weather.

(419) The W arm of Raven Bay narrows to 250 yards 0.6 mile N of Ogangen Island and continues N for another mile; excellent anchorage for small boats may be had in 3 fathoms just S of the prominent islet at the head of the arm. The sandflats at the extreme head are suitable for beaching small craft.

(420) The small cove W of the middle part of the narrows affords anchorage for small boats in 3 to 5 fathoms, but the swinging room is restricted by the reef on the W side. At the head of the cove are abandoned saltery buildings.

(421) A rock that uncovers is 400 yards S of the cove and slightly to the E of midchannel; the best water is W of the rock. Just S of the entrance to the narrows, a 4¾-fathom rocky shoal can be avoided by favoring the shore on either side.

(422) **Eagle Bay,** 3 miles W of Raven Bay, is about 1.3 miles wide at its entrance and extends 2.5 miles in a N direction; it is characterized by a particularly rugged and precipitous shoreline. High rocky cliffs rise directly from the high waterline in most parts of the bay and even where cliffs do not exist, the rise is very steep and broken. The very rugged country surrounding Eagle Bay causes violent williwaws in NW, N, and E weather. **Snipe Point,** which divides the bay into two arms, is very rugged at its S tip and quite rough and weathered on the top.

(423) The E side of the entrance to the bay is marked by **Spire Rock,** a very sharp pinnacle, 100 feet high and about 100 yards offshore. On the W side of the entrance **Label Reef,** awash at high water, extends about 400 yards offshore from the E side of Eagle Point. This reef is plainly visible at any stage of the tide because of breakers.

(424) Each arm of Eagle Bay is about 1 mile long and both extend in a NE direction. The northernmost arm is only 0.4 mile wide at its widest point and has numerous islands near its head. The islands are flat, grass covered on top, with steep rocky sides rising directly from the water, and are used as nesting places by many birds in the summer months. The arm is navigable as far as these islands.

(425) The E arm of Eagle Bay is about 0.5 mile wide for half of its length, and affords good shelter in all but extreme S weather about 0.3 mile inside the entrance.

(426) Good anchorage may be had in Eagle Bay, but the S swell is often uncomfortable. Anchorage with protection from all weather is available below the island in the N arm, but swinging room is limited. Depths of 11 fathoms extend into both arms of the bay; however, broken bottom with a 3¼-fathom spot extends from Snipe Point almost halfway across the entrance to the N arm.

(427) A portage at the head of Eagle Bay leads to Pumicestone Bay on the N side of the island.

(428) **Eagle Point** is the prominent headland between Eagle and Kuliliak Bays. The point is very rugged at its S end, and is distinguished by two prominent mountain peaks. The S peak, at the extreme S end of the point, is 1,340 feet high; when viewed from the S, it appears conical in shape with a very sharp top, but from the E or W it appears flat on top, with a sharp, rock peak at the S end of the flat portion. The N peak, about 1 mile NE from the S one, is 1,520 feet high, and appears pyramidal in shape from all

directions, with a bare rock top. The blunt, S face of the cape is much weathered, with high rock cliffs, numerous slides, and many pinnacle rocks along the shore.

(429) A shoal, with 14 fathoms 0.4 mile from shore, makes out to S from the most S tip of Eagle Point. Passing vessels are advised to stay at least 0.5 mile off the cape in order to keep outside the 20-fathom curve.

(430) Appreciable tidal current was noted for a distance of 1 mile off Eagle Point. The flood sets W and the ebb E. With an appreciable swell running against this current, high, sharp, broken seas, with curling tops resembling tide rips, were noted off the point.

(431) **Chart 16514.–Kuliliak Bay**indents the SE coast of Unalaska Island immediately to the W of Eagle Point. The bay is divided by a narrow ridge of land into two parts, forming an outer bay and a well-protected inner bay. The end of this narrow ridge of land, **Repetition Point,** is the E point of the entrance to the inner bay.

(432) A chain of low, black rocks extends 325 yards offshore in a SW direction from the SW corner of Eagle Point and marks the E side of the entrance to outer Kuliliak Bay. A shoal, covered 18 fathoms, 0.8 mile from shore, extends SW from the outer rock of this group.

(433) Outer Kililiak Bay is open to the S. The shores are characterized by rock cliffs, except at the head of the deep bight which forms the NE part of the outer bay. At the head of this bight is a sand beach and a valley passes N of Eagle Point into Eagle Bay. Anchorage in 13 to 14 fathoms may be had at the opening of the bight, with some protection in SE weather and good protection in N and NW weather.

(434) A reef, with the outer part of it awash at half-tide, makes out from the center of the N shore of outer Kililiak Bay, and a shoal covered 8 fathoms extends 330 yards S from the reef. Otherwise the bottom of the outer bay is very even, decreasing in depth very gradually from 30 fathoms at the entrance to 12 fathoms at an average distance of about 200 yards off the N shore.

(435) Inner Kililiak Bay affords good shelter E of Nest Rock in 7 fathoms in all weather. The entrance is about 500 yards wide between the cliffs 200 feet high on the W side and on the steep tip of Repetition Point on the E side.

(436) **Dome Rock,** the outer rock of a conspicuous group that extends 120 yards SW from Repetition Point, is a good landmark on the E side of the entrance to the inner bay; the rock is about 30 feet wide and 5 feet high.

(437) Along the W shore of the entrance to inner Kuliliak Bay, flat reefs, rocks awash, covered rocks, and heavy kelp form a fringe some 200 yards wide. In this area is a large black rock, part of which rises to a sharp point 10 feet above high water, 75 yards out from the base of the shore cliff. About 160 yards NE from this large, black rock and 180 yards offshore is **Perch Rock,** a small, black rock about 1 foot high and surrounded by kelp.

(438) **Trava Point** is a small, flat, grassy point on the S side of inner Kuliliak Bay and 0.5 mile NE of the entrance. **Nest Rock** is a small, grass-covered rock island, 15 feet high and 0.9 mile NE of the entrance. **Williwaw Point** is a low, sandy point 0.3 mile beyond Nest Rock. A cascade is 0.5 mile inland from the head of the bay.

(439) The W shore of the inner bay is a curving, pebble beach fronting a low, grassy bluff. A low, wide valley, through which fog often drifts and winds always draw in N and W weather, extends across Unalaska Island to Kashega Bay. The W and NW shores of the inner bay, E of Nest Rock, are lined with low reefs, rocks awash and covered, and heavy kelp for a distance of 100 to 300 yards offshore. A rock, awash at half tide and surrounded by kelp, is 300 yards off the N shore directly N of the entrance. A fringe of heavy kelp, 50 yards wide, lines the S shore from the entrance to Trava Point.

(440) Proceeding to sheltered anchorage inside the inner bay, the controlling depth is 4½ fathoms after passing the entrance. A channel with this depth is close to the SE shore of the bay and just outside a heavy fringe of kelp along the NW shore of Repetition Point. On the N side of this channel the water shoals very gradually to the opposite side of the bay. NE of Trava Point the water deepens and the bottom is flat.

(441) In N and W weather violent williwaws occur in the head of inner Kulikiak Bay, above Williwaw Point. In S weather short seas, almost breaking across the entrance, make it difficult to enter.

(442) W of Kililiak Bay the country is less rugged; the peaks are lower and are separated by wide valleys. In the spring and early summer the snow disappears from all the peaks to the W, while in the area E of Kuliliak Bay many peaks remain snow-covered throughout the summer.

(443) From Kulikiak Bay the shore trends SW for 11 miles to Lance Point. Rocky ledges extend some distance off the intervening points.

(444) **Lance Point,** 12 miles SW of Eagle Point, is 465 feet high and has the appearance of a low tongue projecting from the higher land N of it. **Huddle Rocks,** four small islands, the largest 170 feet high, are about 1 mile SW of the point.

(445) About 5 miles W of Lance Point is a small bight that affords shelter for small craft in all but SE weather. Many rough rocky ledges extend from the shore between Lance Point and this small bight, at the head of which is a broad sand beach divided into two parts by a small rocky point. Three streams flow through the low, grassy valley behind the beach. An islet, 70 feet high, is SE of the low point that forms the S side of the bight; rocks awash are 300 yards NE of the islet. A chain of small rocky islets extends across the entrance to the bight, and a broad, flat reef that uncovers 1 foot is NW of these islets.

(446) **Local Magnetic Disturbance.**–Differences of as much as 6° from the normal variation have been observed at Cape Aiak and as much as 3° on Huddle Rocks and at Lance Point.

(447) **Cape Aiak,** on the S coast of Unalaska Island, 8 miles SW of Lance Point or about 15 miles from Konets Head, is 1,820 feet high, and from the NE at a distance appears like a flat-topped island with a massive horn or pinnacle on the S slope. Breakers extend 300 yards S from the S end of the point.

(448) Between Cape Aiak and Konets Head, the flood current sets W toward Umnak Pass and increases in velocity as the pass is approached. It is strongest near the shore. The ebb is weaker than the flood.

(449) **Surveyor Bay,** on the W side of Cape Aiak, is 4 miles wide and 2 miles to its head. About 2 miles NW of Cape Aiak, the **Gargoyle Islands,** a group of fantastically eroded pinnacles about 250 feet high, make out 0.4 mile from a point on the N shore and divide the bay into two bights. A reef, awash at high water, connects the islands to the shore.

(450) A shoal, which has a least depth of 3 fathoms and breaks in heavy weather, is 0.3 mile S from the SW extremity of the is-

lands; another 3-fathom shoal is 0.6 mile W of the same point and 0.5 mile S of a reef-fringed islet close to shore.

(451) Small-boat anchorage with some shelter from SE can be found in 5 fathoms 250 yards from the shore in the cove NW of the Gargoyle Islands. In using the anchorage, care must be taken to avoid a covered rock 400 yards from shore that breaks in moderate weather. The anchorage is not recommended but is the best available shelter between Kuliliak Bay and Umnak Pass.

(452) The W bight of Surveyor Bay has low sand dunes along its N shore; the W shore is fringed with ledges, one of which extends 700 yards off. A 4¾-fathom rocky patch, 1.5 miles NNE from Serpent Point, is about in the center of the bight.

(453) **Serpent Point,** on the W side of the entrance to Surveyor Bay, is a low narrow point projecting SE. Anchorage with good shelter except from the S and SE can be found 0.8 mile N of the point and 0.5 mile from the W shore of the bay in 15 fathoms. An 8-fathom shoal is 0.5 mile S of the point.

(454) **Chart 16513.**–About 1.8 miles W of Serpent Point, a chain of grassy islets projects S from **Cape Izigan** and terminates in **South Rock,** 23 feet high; this is the southernmost land feature of Unalaska Island. South Rock is 6 miles SW of Cape Aiak and 9 miles SE of Konets Head, the W end of Unalaska Island. Depths of 20 fathoms are found 300 yards off the S side of the rock.

(455) **Tiderip Point,** 6 miles NW from South Rock, is marked by a round hill 397 feet high. A chain of rocks, one 25 feet high, extends 0.5 mile S from the point.

(456) **Konets Head,** the W extremity of Unalaska Island, is marked by a conspicuous knoll 127 feet high.

(457) **Lone Peak,** about 3.5 miles NE of Konets Head, is the top of a long narrow ridge, 1,847 feet high, running roughly parallel to the coast. From NE and SW the peak appears like a sharp cone and forms a useful landmark.

(458) The shore between Tiderip Point and Konets Head is fringed by reefs and ledges that extend almost 0.5 mile offshore. Ledges extend about 300 yards W from Konets Head but deep water is found 400 yards W of the ledges. A bank, with a least depth of 8 fathoms surrounded by much deeper water, is 1.8 miles W from Konets Head. Heavy tide rips occur on this bank on the ebb.

(459) About 1.5 miles S of Konets Head is **Emerald Island,** a flat-topped, grassy island 0.3 mile in diameter and 204 feet high. The island is fringed by reefs, and a rock that uncovers 3 feet is 700 yards SE of it. Another group of rocks, the highest 8 feet, is 0.5 mile to the N of the island. Rocks extend 350 yards off the W side of the island.

(460) By using the channel between Emerald Island and Konets Head the tide rips to the S of Emerald Island can be avoided. The narrowest part of the channel is at the NW end, where it is less than 0.4 mile in width. The shores bordering the pass are broken with many projecting ledges, but these can be distinguished easily.

(461) Irregular bottom with depths of 6½ to 12 fathoms extends 3.5 miles S of Emerald Island. Tide rips which have the appearance of breakers occur on these spots on the ebb; with a strong ebb and an opposing breeze they attain considerable size. It is advisable to avoid this area.

(462) **Polivnoi Rock,** 17 feet high and 100 yards in diameter, is 5 miles SW from Konets Head; a breaker is 300 yards SW of the rock. Sea lions are often seen in the vicinity. In heavy weather, seas wash over the rock. An 8-fathom rocky shoal, marked by heavy tide tips, is 1.2 miles 065° from the rock.

(463) A convenient anchorage in S weather can be found about 1 mile NE of Konets Head in about 20 fathoms. In approaching this anchorage on the ebb, allowance should be made for the current. The flood is not felt immediately N of Konets Head.

(464) A small bank, with a least depth of 5¼ fathoms, is about 0.5 mile from shore, 2 miles NE from Konets Head. NE of the bank, the shore is steep-to and is exposed to the strong current of Umnak Pass.

(465) **Boulder Bay,** 5 miles NE from Konets Head, is a small bay with a kelp patch in the middle of its entrance. Two small shacks are in a cove on the E shore.

(466) **No Name Cove,** 3 miles NE of Boulder Bay and on the W side of **Ranchers Point,** is a small bay about 0.5 mile wide and 0.5 mile to its head. A small indentation on its W side furnishes good shelter for small craft except in severe N weather.

(467) **Station Bay,** on the E side of Ranchers Point, is divided into two arms. The E arm is about 0.3 mile wide and 1.5 miles long in a SE direction. The buildings of a ranch are on the W shore near the head of this arm. Anchorage for small vessels can be found off these buildings in 7 fathoms. Near the entrance to this arm is a conspicuous column rock about 94 feet high. **Peacock Point,** separating Station Bay from the unnamed bight to the E, has broken ledges and rocks that extend 700 yards NW. The W arm of the bay is about 0.5 mile wide and almost 1 mile long in a S direction.

(468) Chernofski Harbor, 2 miles E of Station Bay, was described earlier in this chapter.

(469) **Umnak Pass,** separating Unalaska Island from Umnak Island, is about 3 miles wide and about 10.5 miles long in a NE and SW direction from the vicinity of Polivnoi Rock to that of Pustoi Island. For description of the shore, see various headings previously described in connection with Unalaska Island and those following in connection with Umnak Island.

(470) **Currents.**–The current in Umnak Pass is similar to that in Unimak Pass. At times of tropic tides the current may set in a flood direction for as much as 18 hours. The current velocity is 3.5 knots on the flood and sets NE, and 2.5 knots on the ebb and sets SW. Velocities of 4.5 knots have been observed.

(471) The current velocity is 2 knots on the ebb and 3.5 knots on the flood between Konets Head and Emerald Island. Velocities of 4.5 knots have been observed. The flood current causes a set almost at right angles to the course when navigating Umnak Pass.

(472) The current velocity is 2.5 knots near Polivnoi Rock.

(473) (See the Tidal Current Tables for predictions for Umnak Pass.)

(474) The effect of the current in Umnak Pass is felt in a diminishing degree as far as Cape Idak and Cape Aspid on the N side, and on the S side it is felt about 10 miles to the S of Polivnoi Rock.

(475) On the ebb, very pronounced tide rips occur on the S sides of the shoaler banks in Umnak Pass and in the S approach. These tide rips are different from the tide rips encountered in Akutan Pass and Unalga Pass. In smooth weather they look like a line of breakers and may attain a considerable height. In moderate or stormy weather they merge with the seas, increasing their roughness to a considerable extent.

(476) On the flood, light confused tide rips occur in the vicinity of Ship Rock and on the banks to the NE of it, while the pass, with its countercurrents, resembles a broad, shallow river, the effect

being caused by several lanes of currents and countercurrents. Off the points along the Umnak Island shore, tide rips are dangerous for skiffs and small launches, especially between Otter Point and Kettle Cape.

(477) From the S, navigation is more difficult, as Polivnoi Rock is low and Kettle Cape is not easily distinguishable against the higher background. With a heavy, S swell and a strong ebb it might even be found dangerous to attempt the pass because of heavy tide rips. The passage N of Emerald Island might be found preferable under such circumstances.

(478) In the approach to the pass the soundings are confusing as there are numerous banks with depths of 6 to 10 fathoms at distances of 4 to 6 miles from Emerald Island and Polivnoi Rock.

(479) **Routes.**–The following courses through Umnak Pass will avoid the worst of the tide rips: From a position 1 mile E of Ship Rock make good course **217°** for 5 miles to a position abeam of the rocks N of Emerald Island. After passing Konets Head look out for a strong set from the passage N of Emerald Island. Tide rips will be seen on the 8-fathom bank, 2 miles W of Konets Head, if the current is ebbing. Thence proceed on a course **205°,** with Ship Rock astern, for 3.5 miles, to position abeam of Polivnoi Rock, 1.5 miles distant. If bound SW, the 6-fathom spot 2.5 miles 195° from Polivnoi Rock can be avoided by continuing course **205°** beyond it.

(480) **Chart 16500.–Umnak Island,** third largest of the Aleutian Islands, is about 65 miles by 15 miles in extreme length and breadth. On the island are reindeer, foxes and a few head of horses and cattle. Mount Vsevidof, a volcano 6,920 feet high, is the summit of the island. It is situated SW of the center of the island, near the W shore, with no other mountains SW from it. Several prominent buildings and antennas are on **High Hill,** on the W end of the island.

(481) **Chart 16513.–Tulik Volcano,** an enormous crater 7 miles across, is situated in the N part of Umnak Island. Dense smoke may be visible from various parts of the crater.

(482) **Mount Tulik** is a conical peak 4,111 feet high on the SE rim of the crater; another very sharp peak, 3,519 feet high, is on the opposite side of the rim.

(483) **Kettle Cape,** on the SE side of Umnak Island and at the S entrance to Umnak Pass, is a jagged rocky ridge about 490 feet high that from certain directions resembles a kettle. It is the first prominent point W of Umnak Pass. The point is more conspicuous than its height or the configuration of the shore would indicate, as low land surrounds it.

(484) Kettle Cape is fringed by rocks; the outer ones to the SE are about 0.2 mile offshore and are visible only at about low water. A large area of shoal water, 1.5 miles SE of Kettle Cape, has a least found depth of 1¾ fathoms. This area breaks heavily in moderate S weather. It is marked by kelp but the kelp is difficult to see except in flat calm weather. Depths of 10 to 14 fathoms are found between this shoal and Kettle Cape. Some shelter can be found E of Kettle Cape from W and N weather.

(485) The shore NE from Kettle Cape is composed of sections of sand beach backed by low, earth bluffs and gulleys from whence it rises gradually to the rim of the enormous crater of Tulik Volcano which occupies the whole N part of Umnak Island. Outside the high water line are several shoals and reefs.

(486) Two miles NE from Kettle Cape and extending several miles NE, the shore is fringed by rocks that extend 500 yards offshore, and comparatively shoal water, less than 10 fathoms extends 1.3 miles offshore. Heavy tide rips, dangerous for small boats, occur in this area.

(487) **Black Rock,** a flat rocky ledge 10 feet high, is 7.6 miles NE of Kettle Cape and 0.5 mile from shore. Depths of 12 to 20 fathoms are found 0.5 mile S and E of this rock.

(488) About 2.7 miles NE from Black Rock is a point with a rocky ledge that extends about 350 yards NE; a landing can be made behind the ledge.

(489) **Otter Point** is 12 miles NE of Kettle Cape. The intervening shoreline is featureless and Otter Point, when abreast of it, is only recognizable from the change in direction of the shoreline which turns to the N. From the NE, a knoll 275 feet high, rising above a comparatively flat area just W of Otter Point, stands out conspicuously.

(490) **Ship Rock,** 1 mile SE of Otter Point, is one of the most conspicuous landmarks in the vicinity. It is an island about 500 yards long and 200 yards wide with a sharp inaccessible peak 424 feet high at its S end. At its N end is a lower peak ending in an abrupt bluff, giving the island its distinctive shape, but from NE and SW only the single higher peak is visible. The channel between Ship Rock and Umnak Island has depths of over 20 fathoms, but because of strong currents and tide rips it should be avoided.

(491) A bank covered 9 fathoms, on which swirls and tide rips occur, extends almost 0.5 mile E of the island, with deep water beyond.

(492) **Pustoi Island** is flat and grassy, 68 feet high and about 500 yards in diameter. It is 0.9 mile NE of Otter Point. The channel between Pustoi Island and Otter Point has a depth of 8 fathoms. Deep water is close off the E end of the island.

(493) From Otter Point, the shore trends N for 2 miles, then NNW for 1 mile, then NE for 2 miles forming broad **Otter Bight.** Good anchorage can be found with shelter from S, W, and N, in 8 to 20 fathoms. The adjoining beach is suitable for landing except in heavy N weather.

(494) A vessel could remain in Otter Bight in moderate SE weather but not in severe storms. In approaching the anchorage, the depths shoal rapidly from 20 to 10 fathoms about when Pustoi Island comes on range with Ship Rock. Depths of 10 fathoms are found 1 mile from shore, but depths of not less than about 6 fathoms will be found 600 yards from shore.

(495) A reef extends 400 yards from shore at a point 3 miles N of Otter Point. One mile N of the reef, high land begins and extends N to Cape Idak.

(496) The shore NE of Otter Bight to Cape Idak is composed of steep bluffs, with several rocky islets close to shore. It has no hidden dangers except very close to the land and the shore can be skirted at a distance of 0.5 mile.

(497) **Cape Idak,** the NE point of Umnak Island, is the N end of a long, flat ridge about 1,570 feet high, sloping gradually to the N. From the E this point appears as the N end of the island as the land to the W is low, but Cape Tanak extends about 2.7 miles farther N.

(498) **Chart 16500.**–Between Cape Idak and Cape Tanak is a flat bight. The shore of the bight is regular and lined with sand, while inland the terrain is low and grassy except in the region about 1.5 miles W of Cape Idak, where a mountain slope terminates in bluffs near the beach. Depths of 20 to 30 fathoms are

about 1 to 2 miles off the shore of the bight with the bottom shoaling gradually toward the beach.

(499) **Cape Tanak,** about 7 miles WNW from Cape Idak, is a low, rounding point with a number of hummocks about 50 feet high. Depths of over 100 fathoms are within 1 mile of Cape Tanak, though two narrow ledges with depths less than 100 fathoms extend into much greater depths and cause tide rips which may be mistaken for signs of a shoal. Good shelter from S weather can be found E of Cape Tanak.

(500) The flood currents, which set NE along either side of Umnak Island, unite in the vicinity of Cape Idak, causing tide rips. The ebb divides in the vicinity of Cape Tanak.

(501) **Ashishik Point** is a narrow point about 3 miles W of Cape Tanak. It is low and from offshore blends with the higher land in back of it. The point extends almost as far N as Cape Tanak and it should be given a berth of more than 0.5 mile. Landing can be made on this point except in N weather and there is a good supply of water nearby.

(502) The bight between Cape Tanak and Ashishik Point furnishes good anchorage in S weather. Since the prevailing winds in summer are SW there are frequently long intervals when this bight is comparatively smooth.

(503) From Ashishik Point the coast of Umnak Island trends SW. **Boiling Pinnacles,** with least depth of 3½ fathoms, are about 3 miles W of Ashishik Point, with the outer end of the point in range with the outer end of Cape Tanak. The shoal is about 1.5 miles from the shore of Reindeer Point. Deep water is found outside of this shoal. It is marked by kelp, and tide rips occur to the N of it. With the exception of this shoal, no indications of dangers have been found along the W coast of Umnak Island as far S as Cape Kigushimkada and vessels in general may approach 1 mile off the shore.

(504) **Reindeer Point** is 3 miles W of Ashishik Point.

(505) **Cape Chagak,** about 6 miles WSW of Ashishik Point, is not conspicuous. On the N side of the cape there is a bold bluff rising about 200 feet. SW of Cape Chagak the beach is about 3 miles in length and generally sandy.

(506) **Aguliuk Point** is 5 miles SW of Cape Chagak and 4.5 miles NE of Cape Aslik. NE of the point, for about 2 miles, the coast is broken and irregular with bluffs, sand beaches, lava outcrops, and off-lying rocks, the farthest of the latter being within 125 yards of the high waterline. Rocks are off the lava outcrops forming the foot of Aguliuk Point, and a long, narrow edge of rocks, 100 feet high, extends breakwaterlike for 225 yards into the sea on the S side of the point. A sand beach, beginning at this edge, extends SE for about 3 miles to Cape Aslik. Back of this beach, for about 3 miles, the terrain is a regular and fairly consistent slope.

(507) **Local magnetic disturbance.**–Differences from normal variations of as much as 4° have been observed at Aguliuk Point.

(508) **Bogoslof Island** (53°56'N., 168°02'W.) is in the Bering Sea about 22 miles N of Cape Tanak. It is of recent volcanic formation, and eruptions have completely changed the topographic features several times. Accordingly to existing records, eruptions have occurred in 1796, 1883, 1906, 1910, and 1923-27, but it is probable that there have been other eruptions of which there are no records. It now consists of one main island and a rocky islet known as Fire Island. Bogoslof Island forms a useful landfall on a course W from Cape Cheerful.

(509) Bogoslof Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the entire island. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(510) The 500-fathom curve around Bogoslof Island approximates a circle about 5 miles in diameter.

(511) The main island, once known as **Castle Island** because of a castle-shaped rock on it, is about 1 mile long and 0.5 mile wide, and extends in a NW and SE direction. The S end terminates in a low, black sandspit which is now the haul-out place of a large number of sea lions. This point was found to shift its position during the season of 1935. On the NW part of the island is the volcano crater of recent time from which steam emits occasionally, and adjoining the crater is a pond that is 4 feet below high water; the crater is 141 feet high. The rocky portion of the island is the home of thousands of birds.

(512) **Castle Rock** on the SW part of the main island no longer resembles a castle. Its outline is ragged and consists of two main pinnacles, 333 feet high.

(513) **Fire Island,** 225 feet high, is 440 yards NW of the main island and practically connected with it by a rocky ledge which uncovers. It is a steep, rocky island, 220 yards long and 100 yards wide, and has three distinct summits, the middle one being square and resembling a castle. This summit is lower than the adjoining ones. A small islet, 190 feet high, adjoins Fire Island.

(514) Fair-weather anchorage can be had on the NE side of the island, offshore in 20 fathoms, sandy bottom, and on the NW side of the island, 800 yards offshore, in 10 fathoms.

(515) A current is often reported setting E in this vicinity; it is variously reported to set toward Cape Cheerful and toward Umnak Pass, with a velocity of 0.1 to 0.4 knot. It is inferred that with a barometric depression near Unimak Pass it sets toward Cape Cheerful, but with a depression in the Pacific Ocean S of Unalaska Island it sets toward Umnak Pass. Vessels coming from W often made Point Kadin ahead instead of to starboard. Maximum NW currents of 1.3 knots were found on the NE side of the island. There were also indications of a stronger E current on the N side of the island. A 1-knot current, setting continuously N for 21 hours, was observed at a location 0.5 mile W of Bogoslof Island.

(516) **Chart 16511.**–The shore of **Cape Aslik** is the face of an old lava flow. It is very precipitous and irregular, with numerous covered rocks that extend well offshore. Heavy kelp fringes the S side of the cape. The cape is prominent, with vertical cliffs 60 to 150 feet high. Back of the cape, about 2 miles inland, is a conspicuous, conical hill, 865 feet high. This hill is of a dark red color, with a distinct hole in the slope on its SW side. Farther inland, about 6 miles E of Cape Aslik, a distinctive peak rises to 3,310 feet (see chart 16500). It is very ragged with deep slopes and a shoulder 600 feet lower than the summit, that extends about 0.5 mile to the NW. Between Cape Aslik and Cape Kigunak the shore is a beach of fine black sand. Back of this beach is a large, flat valley bordered by mountain ridges on the N and S, and having a lone and prominent mountain in the middle. The valley, which extends to the Pacific Ocean side of Umnak Island, is a swamp land covered with a heavy growth of grass. A large stream flows through this valley.

(517) **Cape Kigunak,** about 5 miles S of Cape Aslik, is easily distinguishable and is a very prominent point on approaches from the N. It has a sharp, conical peak, 1,164 feet high, near its outer end. Its shore consists of a steep beach of boulders and broken

rocks, with steep, grass slopes rising directly behind. Two rocks about 15 feet high, 300 yards off the W part of the cape, and a third rock, same height, on the low-water line show up very conspicuously. Many boulders and rocks and a band of heavy kelp extend about 400 yards offshore around the cape. The bight N of Cape Kigunak affords some protection in S and E weather, but is not recommended in heavy weather.

(518) **Inanudak Bay,** between Capes Kigunak and Ilmalianuk, has depths of 10 to 40 fathoms and affords shelter except from the W and NW. The shore of the bay is rocky and precipitous except at the heads of the several coves and bights which form part of the bay. Sand and pebble beaches are found at the heads of these coves, and low bluffs, from 5 to 20 feet high, rise abruptly from the beaches. Beyond these bluffs are flat lands or valleys.

(519) From the westernmost point of Cape Kigunak, the shoreline curves sharply SE and E and the shore of the bay for about 2 miles is along the foot of a ridge almost straight up from the waterline. At the end of the ridge, and at the head of **Izhiga Cove,** is a sand beach that extends to Cinder Point. The water is shallow along the beach and several lines of breakers make small-boat landing difficult. Back of the beach, beyond the low bluff bordering it, is a flat valley.

(520) **Cinder Point** was formed by a lava flow and is about 150 feet high near the shore, except in the middle where there is a slight draw. A cinder cone 564 feet high is near the center of the point.

(521) **Stepanof Cove,** SE of Cinder Point, has a sandy beach about 1 mile in length at its head. Shoal water and several lines of breakers make small-boat landing difficult except on the N side of the cove where the water is usually quiet; fresh springs and seepages exist along the beach. A 70-foot pinnacle rock at the S end of the beach is conspicuous from all parts of this cove.

(522) A low, narrow valley with steep sides extends SE from the head of Stepanof Cove to the Pacific Ocean side of Umnak Island. The buildings on the S side of the valley are stocked and maintained for land-air rescue work. A road extends from Stepanof Cove to Fort Glenn, about 20 miles to the NE.

(523) **Steeple Point,** forming the S side of Stepanof Cove, has a very prominent, tall pinnacle projecting out of the side of its steep bank and numerous large rocks and boulders off its shore. The pinnacle resembles an inverted carrot and is 200 feet above the beach.

(524) **Hot Springs Cove** has about 1 mile of sand beach at its head with a small stream in the S part. Salmon spawn in a stream about 2 miles back of the beach beneath several small waterfalls. The steam from several small, hot springs at the head of this stream can be seen from the E side of Inanudak Bay.

(525) Between Hot Springs Cove and Cemetery Cove to the W are 1.5 miles of rocky shore. Near and W of the center of this shore, shoal water, marked by kelp, extends 0.4 mile offshore to the 10-fathom curve. Above the beach near the center is an overhanging cliff, 1,000 feet high. The beach in **Cemetery Cove** is rocky and bends N toward Broken Point. Water may be obtained from a small cliff stream on the N part of this beach.

(526) **Broken Point** is not conspicuous. It has a rocky beach with deep water off the point; the 20-fathom curve is about 0.3 mile offshore.

(527) **Geyser Bight,** W of Broken Point, indents the shoreline about 1.5 miles from a line tangent to Broken Point and Cape Ilmalianuk. Its beach is rounded and about 4 miles in length, with the E half sandy while the W half is rocky and bordered with kelp. There are 3 small rock islets 0.3 mile offshore in the center of the bight and another the same distance off the beach in the E part. Some protection may be found in Geyser Bight in S weather but it is not recommended in heavy weather.

(528) **Cape Ilmalianuk,** the S entrance point of Inanudak Bay, is about 500 feet high and conspicuous. It has a rounded shore, with a number of rocks and kelp that extend seaward for about 300 yards. A rock, 0.4 mile NW of the point is conspicuous at low tide. A shoal area that extends 1.5 miles off the cape is 10 fathoms deep 0.5 mile offshore and 20 fathoms about 1 mile farther off. Ships should keep 1.5 miles off the cape.

(529) Anchorage may be found in any part of Inanudak Bay about 0.4 mile from shore. By shifting, shelter may be had from all directions except the NW. No anchorage will give protection from severe NW weather. Good anchorage is available for large ships in 20 fathoms about 1.5 miles from the beaches at the heads of Stepanof Cove and Hot Springs Cove.

(530) Stepanof Cove affords the best shelter from SE around to NNW. Anchorage may be found in 8 fathoms with Cape Kigunak just open of Cinder Point. When the wind gets around to S or SW, this cove becomes uncomfortable.

(531) Hot Springs Cove affords shelter in S and E weather. Cemetery Cove affords shelter except from winds from the NW quadrant. Anchorage may be found in Izhiga Cove 0.3 mile from shore in 8 to 10 fathoms, but better shelter from N weather can be found in Stepanof Cove.

(532) **Chart 16500.**–Between Cape Ilmalianuk and Cape Kigushimkada, for nearly 13 miles, there are no known dangers to navigation; ships are advised to keep 1 mile offshore in order to hold a depth of 25 fathoms or more. Kelp extends from 200 to 300 yards off the rocky areas.

(533) The currents off the coast between Cape Ilmalianuk and Cape Kigushimkada are estimated to be from 2 to 3 knots, the strongest being opposite Kshaliuk Point. The current sets NE on the flood and SW on the ebb.

(534) The weather along this coast may change after passing Derby Point. When foggy, wet, windy weather prevails SW of the point, good or comparatively clear weather may be encountered to the NE and vice versa.

(535) Between Cape Ilmalianuk and Derby Point, for about 10 miles, the coast extends in a general SW direction. A practically straight sand beach about 3 miles in length begins on the SW side of Cape Ilmalianuk.

(536) **Kshaliuk Point** is a rounded, prominent point at the SW end of the beach. This point has grassy bluffs about 400 feet high, except on its N side which is practically straight up and down with prominent horizontal layers of stratified rock. SW of the point, the land back of the shore is low, the beach consisting of short stretches of sand, rock, and lava formation. The most conspicuous lava flow is at Twinlava Point, about 4 miles SW of Kshaliuk Point.

(537) S of Kshaliuk Point, between it and Mount Vsevidof, are three sharp prominent peaks about 2,000 feet high and about 0.5 mile apart. Less than 1 mile from the peak nearest the shore is another prominent peak of about the same elevation. It has a broad, rounded base, rising almost from the shore and has two points on the top; a low saddle connects the points.

(538) **Derby Point,** about 1.5 miles SW of Twinlava Point and 3 miles N of Cape Kigushimkada, has cliffs and rock outcroppings along its shore. The steep sides of the point are grass covered

above the cliffs, but the top is bare and strewn with cinders and small lava boulders. The rounded hill on the point resembles the crown of a derby hat when viewed from seaward, the rocky shoreline forming the brim of the hat. This point is a conspicuous feature of this coast, and also serves as a line of demarcation for different weather conditions.

(539) **Local magnetic disturbance.**–Differences from normal variation of as much as 4° have been observed at Derby Point.

(540) The coast between Derby Point and Cape Kigushimkada has a S direction and consists of a bold, rocky cliff at the base of Mount Vsevidof.

(541) **Mount Vsevidof** is an extinct volcano 6,920 feet high and the highest peak on Umnak Island. It is about halfway between Inanudak Bay and Nikolski Bay, and approximately 40 miles SW of Cape Idak.

(542) The upper reaches of this mountain are usually covered with snow the year round. The W side slopes gradually to the shore between Twinlava Point and the N end of the large open bight S of Cape Kigushimkada.

(543) The peak appears conical from the NW with a slightly flattened top, but the large crater so plainly visible from the Pacific side of Umnak Island, does not show at all. The two small glaciers on the N side of the extinct volcano are not prominent from offshore, but the valley that extends inland on this same side has many bare, cinder patches and lava outcrops visible from offshore. This valley goes back toward the large, jagged, saw-toothed mountain range, 6,510 feet high, to the NE of Mount Vsevidof.

(544) **Cape Kigushimkada** is the N point to a large open bight. This cape, at the base of Mount Vsevidof, is the outer end of a lava-flow which forms a rugged, rounded headland having precipitous, rocky bluffs, 80 to 90 feet high, with numerous jagged indentations. Many rocks and pinnacles are adjacent to the shore of this cape. The shelf on top of the cape is covered with many lava outcrops, cinder beds and fissures, and rises gradually inland to form part of the W slope of Mount Vsevidof.

(545) On the SE side of Cape Kigushimkada is a bold headland, prominent from seaward. A broad sand beach, about 1.5 miles S of this headland extends for about 2.5 miles SSW. Behind the beach is a broad, grassy valley with three prominent streams, the two northernmost carrying the drainage from the S slopes of Mount Vsevidof.

(546) At the S end of the sand beach is a rocky headland with outlying ledges that are partially awash at high water. A rocky islet is about 0.6 mile W of the headland. About 0.5 mile S of this islet is a covered rock which breaks in heavy weather, and another islet is about 1 mile N of Okee Bay. From the headland the shore runs in a SW direction and is very irregular, with numerous indentations.

(547) From Cape Kigushimkada to the SW end of Umnak Island, the land is rolling, with numerous rounded hills. The bottom along the shoreline of both Umnak Island and Ananiuliak Island is very uneven and has some dangers to navigation.

(548) **Chart 16511.–Okee Bay** is a small, shallow cove on the E side of a small peninsula on the N side of Okee Point. This bay affords some shelter for small craft and has a sand beach where landings can be made in most any weather. Another small, shallow inlet is on the W side of the small peninsula.

(549) **Okee Point** is a headland on the N side of the entrance to Nikolski Bay. It has steep, rocky bluffs back of the high water line and rocky ledges extend offshore.

(550) **Anangula (Ananiuliak) Island,** on the N side of Nikolski Bay and off Okee Point, is a kite-shaped island about 1.4 miles in length and 301 feet high near the center. Bare rock ledges extend 50 to 60 yards from the grass line on the shore of the W side of the island. Passage between this island and Umnak Island through Seaweed Pass is not advisable as there are no natural ranges that can be recommended. During the summer, kelp may extend across the passage.

(551) **Nikolski Bay,** between Anangula Island and Cape Starr, is about 12 miles S of Mount Vsevidof. It is about 4.5 miles wide and 3 miles long, and is open from the W to the NNW. The shore of the bay consists mostly of gravel and rock beaches. It is fringed to varying distances offshore by reefs, large boulders and kelp. Many of these reefs actually are above high water but are covered by the heavy swell except on very calm days. The area bordering the reefs along the shore is foul, with numerous covered rocks. It should not be approached too closely.

(552) The bay is surrounded by rolling hills, that are covered with a thick mat of grass, and frequent, marshy areas. **High Hill,** 712 feet high, is near and N of the center of the bay and is a prominent landmark in approaching anchorage. It is cone shaped but flat topped, and the sides, except inland, are steep, rocky, and rugged.

(553) Except on very calm days there are few places where safe landings can be made. It is reported by the natives that in the winter when heavy northwesters are blowing, it may be impossible to land even in Nikolski in Mueller Cove. Landing is possible in most any weather in River Cove in the mouth of Sheep Creek.

(554) The currents are strong, especially around Anangula Island, but are not dangerous, as they generally run parallel to the shoreline.

(555) Anchorage with protection from W and N weather is found in the N end of Nikolski Bay behind Anangula Island in 10 to 25 fathoms with good holding ground. A good anchorage in E weather is off **Kelp Point** in 10 to 20 fathoms.

(556) **Eider Rock,** about 1 mile NW of High Hill, is a small island reef 600 yards offshore in the NE portion of Nikolski Bay.

(557) The head of Nikolski Bay S of Kelp Point is a rectangular-shaped bight with a large, rocky ledge along the shore at its head. The two coves in this bight are **River Cove** at the NE corner and Mueller Cove in the S. The large rocky ledge separating the two coves is almost covered at high water.

(558) **Sheep Creek** is the largest stream in the vicinity and empties into River Cove. The creek extends NE into a broad, marshy valley dotted with numerous ponds.

(559) **Mueller Cove,** the inner anchorage of Nikolski Bay, is the cove in which the village of Nikolski is situated. Only very small fishing boats attempt to enter this cove because of the constricted entrance caused by the reef in midchannel. With any kind of weather from the W or N, seas break across the entrance.

(560) **Rudisell Reef,** at the entrance to Mueller Cove, is practically covered at high water and in heavy weather the seas break over its narrow, outer ledge of rocks that are about 4 feet above high water. This ledge, however, serves as an excellent natural breakwater and protects the beach at the head of Mueller Cove except when heavy northwesters are blowing up the bay.

(561) A rock covered ¾ fathom, is 0.1 mile W of Rudisell Reef and in the entrance to the channel into Mueller Cove. The location

of this rock nearly always can be determined by the breaker over it. At high water, in W weather, it may break very heavily and cause a dangerous surge across the channel toward Rudisell Reef.

(562) **Nikolski** is one of the most frequented places for small trading schooners W of Unalaska. Fishing, trapping, and the harvesting of seals in the Pribilof Islands are the means of livelihood. A good shingle beach is in front of the village. The store and the church are painted white and are the most prominent buildings in the village. The church has two crosses, one of which is on the belfry tower. This tower is the most conspicuous point in the village. The store carries a few supplies, but is stocked only during the trapping season. Mail is delivered by airplane. The ranch buildings of the Harris Livestock Co. are about 0.3 mile SW of the village. The buildings of the company consist of living quarters, barns, and storehouses. The largest of these buildings is a landmark looming prominently on the skyline from the anchorage off Kelp Point. The wool-storage building, painted red, also makes a conspicuous landmark.

(563) **Cape Starr,** about 3 miles to the W of Nikolski, is a bold headland with steep rocky bluffs, 150 to 350 feet high, backed by rolling, grass-covered hills. The shoreline is bordered by rough, irregular, rocky ledges and reefs, numerous rocks and extensive kelp beds. Several small islets, reefs and rocks awash are from 0.5 to 3 miles off Cape Starr.

(564) S of Cape Starr is a wide, flat beach of fine white sand, back of which are low, grass-covered, sandy bluffs. Inland a broad valley that extends across the island, bends NE to the chain of lagoons S of Nikolski. The remainder of the Bering Sea coast of Umnak Island is mostly rocky and rugged. SW and W from the beach are numerous jagged, rocky projections, and rock pinnacles. The area outside the high water line is filled with rocks, small ledges and patches of kelp. The most prominent and highest place on the SW end of Umnak Island is **Elbow Hill,** 442 feet high, about 4 miles SW of Cape Starr. It is grass covered and prominent from seaward. **Idaliuk Point** is 2.4 miles W of Elbow Hill.

(565) **Pancake Rock,** about 2.5 miles W of Cape Starr, is a 22-foot islet which sometimes has, from a distance, the appearance of a flat pancake on the surface of the water. This islet is the E end of a low, flat, rocky reef about 500 yards in length.

(566) Several reefs and rocky islets are SE of Pancake Rock. The farthest from the shore of Umnak Island is a rocky islet, surrounded by ledges and rocks awash, about 1 mile SE of Pancake Rock and 1.5 miles offshore from Cape Starr.

(567) **Adugak Island,** about 7 miles W of Cape Starr and 4 miles off Idaliuk Point, is 160 feet high.

(568) Adugak Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the entire island. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(569) **Chart 16500.–Cape Sagak,** the SW end of Umnak Island, is long and generally low with rolling grass-covered hills and short stretches of sand beaches.

(570) The passage between Cape Sagak and the NE point of Samalga Island is dangerous. Foul ground and extremely heavy tide rips extend between the two points of land and for a considerable distance N and S. There are impenetrable patches of kelp and the current goes through at a very high velocity, probably 7 knots.

(571) Vessels drawing more than 4 feet should avoid this passage. Boats of less draft may go through only during periods of slack water and in fair weather. Such craft should clear Cape Sagak by 0.25 mile on a course **160°**.

(572) **Samalga Island,** the long and narrow island about 2 miles SW of Cape Sagak, is 4 miles long and 0.5 mile wide at its widest part. The high water line is strewn with rocks and small boulders, and occasional stretches of sand beach are found around the island. Back of the shore the terrain rises abruptly in the form of grassy slopes. The interior is flat and entirely covered with grass. Foxes and sea lions are the only wild life on Samalga Island. It is not inhabited, except for 1 month during the winter when the trappers come to get fox pelts.

(573) The entire island is fringed with a rocky ledge, that uncovers, and extends from 100 yards to 0.5 mile offshore. On the SW end of the island this ledge becomes an extensive reef stretching WSW along the prolonged axis of the island for nearly 2 miles. In heavy weather there are breakers for a considerable distance over this area.

(574) Landings can be made at various places except in heavy weather when the island is almost surrounded with breakers. The best landing is in a small bight just N of a cabin on the N side of the N end of the island. Vessels may anchor in 10 to 15 fathoms on the bank that extends 160° from the middle of Samalga Island, or in not less than 15 fathoms, N of the SW end of the island. There is no protection in either of these anchorages.

(575) The currents are treacherous in the vicinity of Samalga Island.

(576) The SE coast of Umnak Island should be navigated with great caution. SW of Vsevidof Island, fog appears to be more prevalent than to the N. With W and SW weather the fog drifts across the low, SW part of Umnak Island while the high mountains NW of Mount Vsevidof form a barrier that may cause clear weather in their lee when all the area SW of Vsevidof Islands is in fog.

(577) W of Samalga Island currents of about 4 knots have been observed setting N when the tide at Dutch Harbor is rising and S when it is falling.

(578) Currents are weak over the bank inside the 100-fathom curve S of Umnak Island.

(579) NE from Cape Sagak, the Pacific side of Umnak Island is fringed with rocky ledges and kelp beds. The shallow bight 11 miles from the cape has a sandy beach above the ledges and is backed by low, grassy, bluffs about 100 yards inland. A chain of three lagoons are in the low valley that extends N from the bight to the village of Nikolski. On the NE side of the bight is a bold headland with steep, rock bluffs rising to 561 feet.

(580) **Driftwood Bay,** about 40 miles SW of Konets Head, Unalaska Island, is on the SE coast of Umnak Island opposite Nikolski. The bay is between Cape Udak and Black Cape. It is about 3.5 miles across the entrance and is divided into two arms by a headland about 435 feet high. Water may be obtained in either arm.

(581) The W arm is clear of dangers and shoals gradually. From its head a trail leads across the island to the village of Nikolski. Good anchorage may be found in 15 fathoms. In SW weather some shelter may be obtained in the lee of Cape Udak. In S or SE weather, there is no good anchorage, but in an emergency small boats might find some shelter in the E arm.

(582) The E arm, **Traders Cove,** is more or less foul and should not be entered without local knowledge. Small boats could be hauled out on the sandy beach in the NE corner of this arm. In this

corner is a shack in which fuel and food supplies are kept for sheepherders.

(583) **Cape Udak,** on the W side of Driftwood Bay, appears as a flat plateau about 600 feet high and about 1.2 miles across its seaward face. All sides of the cape are precipitous, rocky cliffs.

(584) **Black Cape,** about 392 feet high, is on the E side of Driftwood Bay. The cape slopes gently down to the water's edge and has a group of rocky islets, about 135 feet high, 175 yards offshore.

(585) **Lookout Point** is 4 miles NE of Black Cape. From Lookout Point for 6 miles to the point opposite Kigul Island, the shore of Umnak Island trends ENE. Numerous rocky islets extend offshore for 1.5 miles. In addition to these visible objects, numerous kelp patches mark depths of 2 to 5 fathoms. The outermost of these is S of Kigul Island and has a depth of 4½ fathoms.

(586) **Amos Bay** is 8 miles NE of Black Cape and about 3 miles N of Vsevidof Island. It is about 0.7 mile wide and 1 mile long in a N-S direction. The W side of the bay is bordered by reefs that extend about 400 yards offshore, and the head is shoal. Anchorage with shelter from NE to W can be found 0.3 mile W of the E entrance point, in 7 fathoms.

(587) To approach this anchorage, from a position 0.8 mile W of Vsevidof Island steer 000° for 3.5 miles, passing 0.4 mile W of a rocky islet that is about 1 mile S of the E entrance point. Favor the E shore of the bay to avoid the reefs bordering the W shore. A trail leads from the head of the bay to Nikolski on the W coast. On the E side of the bay is a cabin in which food and fuel are kept for sheepherders.

(588) **Vsevidof Island,** 280 feet high and about 1 mile across, is the largest of the group of islands on the SE side of Umnak Island and is SE of Mount Vsevidof. A small bay indents the S shore of Vsevidof Island. Covered rocks at the entrance prevent anything larger than a small launch from entering and then only when no surf is running. Rocks extend SE 0.4 mile from the SE point of the island, terminating in a rocky islet about 30 feet high. Depths of more than 20 fathoms are 0.3 mile E of these rocks.

(589) **Ogchul Island,** 1.7 miles E of Vsevidof Island, is about 0.3 mile across, 180 feet high, and is surrounded by deep water. The island is flat topped. The channel between the two islands has depths of 35 fathoms or more.

(590) Ogchul Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the entire island which also encompasses Vsevidof Island. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(591) **Kigul Island,** 3.5 miles N of Vsevidof Island and about 2 miles E of Amos Bay, is the largest of the inshore islands. It is about 0.5 mile in diameter and 219 feet high. The island is 0.5 mile off the coast of Umnak Island, and the channel in the passage between the island and the coast is restricted by shoals to a width of about 150 yards. N of Kigul Island, anchorage with shelter from S and W winds can be found in about 12 fathoms. Anchorage with shelter from E winds can be found W of the island in 7 fathoms. The approach to this anchorage is difficult without local knowledge.

(592) **Lone Rock,** 1.5 miles NE from Kigul Island and 42 feet high, is the northernmost of the group of rocks and islets in this vicinity.

(593) **Russian Bay,** near the middle of the Pacific Ocean side of Umnak Island, is about 1 mile wide and 2 miles long. A rocky ledge, 16 feet high, is about 1 mile E of the S entrance point. This ledge should be given a wide berth to the SW to avoid a rock that uncovers 425 yards SW of the ledge. The point on the NE side of the entrance should also be given a wide berth to avoid the foul area that extends SW of the point for about 0.3 mile. At the head of Russian Bay is a sandy beach where a stream of considerable size flows into the bay. This bay offers protection from N weather in 10 fathoms, sandy bottom. In SE weather the bay is not recommended except in an emergency.

(594) **The Pillars** are a pair of pinnacle rocks, the larger 130 feet high, about 3 miles off the shore of Umnak Island and 15 miles NE from Vsevidof Island. These rocks stand out prominently from all directions and may be seen many miles on clear days. From the N and S they have the appearance of a single pinnacle. From the E both rocks are visible. A rock awash at high water is about 175 yards E of The Pillars. Depths of more than 14 fathoms can be carried to within 0.3 mile all around these rocks.

(595) **Thumb Point,** about 3 miles W of The Pillars, is a long, narrow point, on the tip of which are three large pinnacles. Two of these, about 150 feet high, are on the beach. The third, 121 feet high, is about 150 yards offshore. From distances less than 5 miles these three pinnacles are very distinct; though several others of like size are in the vicinity, these cannot be mistaken, there being no other group of three.

(596) The broad bight between Thumb Point and Kettle Cape is fringed by off-lying ledges. Two valleys lead across Umnak Island toward Inanudak Bay from the head of this bight.

(597) **Chart 16501.–Islands of Four Mountains** are a group of five, treeless, volcanic islands W of Umnak Island. Their names are Uliaga, Kagamil, Chuginadak, Carlisle, and Herbert. The group is about 16 miles from Samalga Island and about 18 by 25 miles in extent.

(598) These islands are high and snowcapped, with some snow remaining throughout the year. Clouds obscure the peaks most of the time. Frequently in the summer, while low fog banks are over the adjacent waters, the peaks stand clear above and are visible away from the fog banks. Fog is often in patches that may be avoided by passing around one of the islands, or by moving out of the sweep of wind through a pass. The winds play about the islands with all the vagaries common to williwaws and may sometimes be avoided by making a move of 1 mile or so.

(599) Navigation among the islands is beset by frequent fogs, strong and treacherous currents, and tide rips that may be dangerous for small craft. Because of the frequent fogs and strong currents it is emphasized that navigation is safe only by frequent sounding and constant reference to the chart. All waters are clear for large ships beyond about 1 mile from the shores, and for small craft beyond 0.25 mile except where obstructions are charted. It is not safe to attempt passage inside any of the off-lying rocks.

(600) In **Samalga Pass,** between Samalga Island and the Four Mountains Group, the waters are deep and 15 miles in width; however, a good berth must be given the shoals that extend SW from Samalga Island.

(601) A bank, with a minimum depth of 13 fathoms, is about 5.5 miles S of Concord Point, Chuginadak Island. Apparently it is the high spot of a large shoal area rather than a pinnacle.

(602) Among the group, the passes are probably all clear, though they have not been swept with wire drags.

(603) It is strongly recommended that a vessel proceeding along the N side of the Aleutian Islands avoid anchorage in the Four Mountains Group in bad weather. With a heavy sea running in the Bering Sea, dangerous tide rips will be encountered among the

islands, and any lee afforded by indentations on the islands' shores is offset by the sudden shifting of the wind that may necessitate shifting anchorage during thick fog through narrow passes subject to strong tide rips.

(604) **Uliaga Pass,** between Uliaga and Kagamil Islands, has 9 fathoms across almost its entire width, and a midchannel course clears all known dangers. In the middle of the pass is a light growth of kelp; it is towed under and difficult to see except during the periods of slack water.

(605) **Kagamil Pass,** between Kagamil and Chuginadak Islands, is wide and clear; no obstructions NW of Corwin Rock. The least depth in the pass is 7 fathoms 1.2 miles N of Chuginadak Island.

(606) In **Carlisle Pass,** between Chuginadak and Carlisle Islands, a midchannel course will carry 28 to 32 fathoms in the shoalest part. The depths increase quickly to 80 and 90 fathoms at both ends of the narrowest part of the pass. On either side of midchannel the water shoals rapidly toward land, but no danger exists until about 550 yards from the shoreline. The currents in this channel are strong and the rips and swirls are of moderate intensity. Small boats should avoid the center of the pass to clear the worst of these.

(607) **Chuginadak Pass,** between Chuginadak and Herbert Islands, is about 3 miles wide, with depths of more than 100 fathoms.

(608) Between Herbert Island and Yunaska Island, to the W of the Four Mountains Group, the passage is 14 miles wide and very deep.

(609) **CURRENTS** observations among the Islands of Four Mountains have not been sufficiently detailed to serve as a basis for precise predictions. The best index to the times of flood and ebb appears to be the information for a location 1 mile E of Yunaska Island which is given in the Tidal Current Tables. Flood sets generally N and ebb S. The duration of slack is usually very short.

(610) Among the islands the water swirls and counters in a highly confused manner, so that rips and eddies may be encountered almost at random. Rips in some cases indicate bottom configurations, but often not. Particularly in bights along the shores, currents counter to those outside may be anticipated.

(611) Strong tidal currents set through all the passes. Velocities exceeding 4 knots have been noted and it is probable that they reach 5 and 6 knots at times. Heavy tide rips may be anticipated except at slack water. In Uliaga Pass and in Carlisle Pass, the flood sets NE. Between Herbert Island and Chuginadak Island flood is to the NW. In Kagamil Pass the currents are confused and the flood appears to enter the passage from the E, passing to the NW to mingle with the flood current from Carlisle Pass, and thence turns N along the W side of Kagamil Island. S of Chuginadak Island considerable differences in the direction and strength of the current over short distances may be noticed. Heavy rips, except in calm weather and at slack water, are about 1.5 miles SE of Concord Point, the SE point of Chuginadak Island. Current boils have been noted as far as 7 miles offshore. Inshore, the set appears to be to the E most of the time. Offshore, about the 500- to 1,000-fathom curves, it seems to be principally to the W.

(612) **Anchorages** in the group of Four Mountains Islands are few and inadequate. The principal one is in Appellate Cove, a bight on the N shore of Chuginadak Island. Protection from N weather may be found in South Cove on the opposite side of this island from Appellate Cove. About 3.5 miles to the E of South Cove is another anchorage, of small extent but offering excellent protection from the N. An anchorage giving protection from SW to NW weather is available in the bight at the NE corner of Chuginadak Island, about 0.9 mile S of Corwin Rock.

(613) A fair anchorage for medium-sized craft is in a cove on the N side of Kagamil Island. Another anchorage is in a bight on the S side of the extreme E end of Kagamil Island.

(614) No other anchorages about these islands can be recommended and none around Carlisle and Herbert Islands. Small craft may find bights here and there where the depths and swinging room are suitable for anchoring, but the prevalence of strong currents, heavy seas, and bad wind conditions make them unsafe. The bottom in and around this group of islands, where it is not rocky, is essentially cinders and volcanic ash mixed with sand and gravel.

(615) **Uliaga Island,** the northernmost and smallest of the Four Mountains Group, consists of one central mountain cone with a few prominent spurs. On the slopes are several spire like rocks. The crest of the peak, 2,915 feet high, has two points, one sharp and the other flat, larger, and slightly lower. The NW side of the mountain is very steep and is greatly eroded. A serrated ridge protrudes from the S side of the mountain, and the S one of three peaks on this ridge is a good landmark.

(616) The cove on the N end of the island is filled with kelp and affords poor protection for small boats. The E side of this cove is a cape, formed by a rough, lava outcrop, with a sharp, narrow ridge leading down to it. The W side of the cove is a wall of rock 340 feet high. The largest stream is on the W side of the island. A sharp, needle like pinnacle with two points, the higher 65 feet, is less than 0.5 mile from the NW shore and about 1.1 miles N of the westernmost point of the island. This point is comparatively long and consists of a narrow ribbon of lava that extends into the sea from one of the mountain ridges. On the S slope of this ridge and about 0.8 mile E of the W point of the island is a sharp spur, 956 feet high.

(617) A rock, which uncovers 3 feet, is about 0.2 mile from the E shore of the island and well outside the thick kelp line. The best landing site on the island is on the E side about 0.5 mile from the SE corner. This landing is on a boulder beach behind a barrier of kelp and near a trapper's cabin, which is occupied during some winters. A prominent scar is in the low, grass bluff bordering the shore in this vicinity. The small cove S of the landing is marked by a 40-foot pinnacle rock at the S end of a boulder beach.

(618) **Kagamil Island,** between Uliaga and Chuginadak Islands, has a large mountain in the center of its S half. The mountain is 2,930 feet high, and has a circular crater on its NW side. Its upper slopes are steep and rocky, while those nearing the base make a somewhat abrupt change to large, gently sloping or flat areas of grass or tundra which generally terminate in bluffs. Near the SE end of the island a number of femoralis emit vapor near the tops of the cliffs, and at the S end is a strong steam jet in the cliff a few feet above the sea.

(619) The hills in the N part of the island culminate in a 1,640-foot peak, that is close to the N shore. The two largest valleys are on the E side of the island; the northernmost is quite flat, with some grass-covered bluffs, and is drained by two small streams. What is probably the best camp site on the island is in the valley at the head of **North Cove,** the largest of the coves on the N shore. This valley, circular in shape, and the smallest on the

island, has one permanent stream. North Cove has the only sand beach on the island.

(620) **Candlestick Point,** on the W side of North Cove, has striking topographic features in a long, thin wall of rock with a 75-foot arch to form the point proper, and a group of 10 tall pinnacles close by. The wall of rock is 315 feet high and juts out N into the sea. The pinnacles, the tallest being 156 feet, are grouped slightly offshore about the outer end of the wall. The NW point of the island is a detached spur, 591 feet high, with a conspicuous smooth, red cliff, about 0.3 mile W of Candlestick Point.

(621) From the red cliff the coastline trends S. High cliffs with a series of gray pinnacles border the shore. S of these cliffs, the only valley on the W side of the island begins at the head of a small cove. This valley is narrow, about 2 miles in length, and is drained by the largest stream on the island. A small lake is reported to exist in this valley. To the S, the cliffs along the shore rise almost vertically from the sea 300 to 500 feet, with no talus or ledge at the waterline. The cliffs at the SE end of the island are broken in many places by caves. The shore around the S end of the island is of very rough lava and boulders, the lava being most prominent at the SW corner of the island.

(622) A fair anchorage for medium-sized craft in 10 fathoms, rocky bottom, is on the N shore of Kagamil Island in North Cove. It is subject, however, to violent williwaws. Water may be found in the cove. Entrance is from due N of the center of the cove and well clear of the vicinity of the pinnacles on the W side. Another anchorage may be found in 16 fathoms in a bight just S of the E end of the island. The bottom is reported to be coarse, black sand and fine gravel. This bight is marked by a high ridge, that extends from the mountains, and a Tablelike headland. There are a stream and a cabin in the bight. Williwaws may be encountered here, and the currents are troublesome; nevertheless good shelter from W weather may be had.

(623) **Chuginadak Island,** the largest of the Four Mountains Group, consists of two mountain masses divided by a low, wind-swept valley across a narrow neck of land. The low area of the valley has rolling grassland interspersed with areas of lava flow, cinder patches, and conical cinder hills.

(624) The E part of the island is an area of rugged terrain formed by a group of eroded volcanic peaks, the highest being 3,840 feet. Numerous valleys and ridges descend to the rocky bluffs bordering the shore. The peaks, almost constantly hidden by clouds, are covered with snow nearly the year round. The lower levels have a vegetation of thick grass, while the higher altitudes are of barren rocks and lava ash. Many prominent waterfalls may be seen around this part of the island. In about the middle of the E coast are several areas where steam escapes from the top of the shoreline cliffs. On the S side, **Concord Point,** the SE end of Chuginadak Island, is a high headland of rolling, grassy hills. Immediately to the NW of this headland, **Black Peak,** the remnant of a large crater, the W rim of which is a distinctive black crag, is a conspicuous landmark from the SE and SW. It is 1,525 feet high, and is usually visible when the higher peaks inland are hidden by clouds.

(625) The coastline of the E part of the island is indented by many coves and bights. Extensive kelp beds are found in the shoal areas and numerous large boulders and off-lying rocks along the shore. **Corwin Rock,** 56 feet high, stands prominently at the extremity of a submerged reef making out from the NE shore of the island. The outer limits of Corwin Rock are within about 0.7 mile from the nearest point of Chuginadak Island. Although this rock appears as a single island, it consists of two small islets, separated by a small, narrow strait. On the SW side of Corwin Rock the kelp extends well out toward the shore of the island. Currents, swirls, and tide rips indicate foul waters, and no passage exists between the rock and the island.

(626) The W part of Chuginadak Island consists of a tall, symmetrical cone, known as **Mount Cleveland,** 5,675 feet high. The sides of this volcano are streaked by series of lava flows, with intervening, grassy patches on the slopes, most of these patches being on the S side. Because of the heat of its active crater, Mount Cleveland loses its snow more rapidly than the other high peaks. A wisp of smoke or vapor issues most of the time from the small crater in the top of Mount Cleveland; a dim glow may be seen at night. An unusual condition consisting of a clear patch of sky in the lee of the volcano has been observed when all other places were heavily overcast. No waterfalls are on this part of the island and there may be water only after a rainfall, as the entire cone is apparently so porous that no stream of water from the melting snow reaches the shore. The coastline is more regular than around the E part of the island, and the kelp beds bordering the shores are less extensive. A few rocks awash are found close inshore along most of the beaches and cliffs.

(627) There are no good places to land on the island in unfavorable weather. However, in moderate weather landings may be made in some of the smaller coves indenting the point on the NE side of Appellate Cove. It is generally possible to land on the S side of the island in South Cove. The landing is on the E side of the cove, at the end of the sand beach or on the adjacent, rocky shore. The best place for a small boat to obtain water is in a small cove about 1 mile E of this landing, near a waterfall with a peculiar white deposit at the top. This deposit can be seen 20 miles offshore on clear days. A small boat can pass inside the 140-foot pinnacle near this waterfall.

(628) No houses are on the island but a large shallow cave is in the face of the cliff at the head of South Cove. With the exception of Corwin Rock no dangers are very far offshore, the farthest being about 500 yards. Rocks awash, and others bare at low water extend about 350 yards from the shore of the SE side of Concord Point. A 1¾-fathom spot is 0.3 mile off the S end of the point. The kelp around the island is not always visible because of the strong currents.

(629) The anchorages in **Appellate Cove,** the largest bight on the N shore of Chuginadak Island, and in **South Cove** on the opposite side of the narrow neck of land have a most unfavorable weather condition. The fog hangs frequently over them when the two main parts of the island are comparatively clear.

(630) Appellate Cove affords protection from all weather except from the NW to NE. However, winds of great intensity are almost constantly encountered. The valley across the narrow neck in the center of the island acts as a draw, causing the winds to be of much greater intensity than would be normally expected. Wind forces double those prevailing outside may be encountered in stormy weather. Bottom is of dark-colored sand and mud, but rocky patches may be found. The bottom holds fairly well in moderate weather but dragging may be expected during severe blows. Anchorage may be found in the center of the cove in 14 to 20 fathoms. Small craft should anchor well into the cove in 7 to 9 fathoms, from 600 to 800 yards offshore opposite the central part of the sand beach. Both the wind and fog may be avoided to some slight extent by anchoring near the W part of the cove, opposite a prominent, dark, rocky outcrop in the bluff.

(631) An anchorage with good protection from the NW to SW, is available in a bight about 0.9 mile S of Corwin Rock in about 14 fathoms, rocky bottom.

(632) Protection from N weather may be found in South Cove, the large cove on the S side of the valley between the two mountain masses. Conditions regarding fog and wind correspond exactly with those of Appellate Cove. South Cove is smaller and has a shoal in the W part. The bottom is rocky and anchors may be fouled. The best anchorage is in 9 fathoms NE from the shoal and it can be approached from the SE to SW bearing in mind the shoal in the W part. The nearest source of water is on the exposed coast, about 1.5 miles E, where small boats may obtain it in favorable weather.

(633) A small anchorage in a bight about 3.5 miles E of South Cove and 3 miles NW of Concord Point gives excellent protection from N winds. Because of the shielding effect of high cliffs, it may be free from fog when South Cove is not. Several waterfalls mark this bight. Anchorage is in 15 fathoms, with rocky bottom and very limited swinging room.

(634) **Carlisle Island,** about 1.2 miles NW of Chuginadak Island, is a mountain consisting of a single, extinct volcanic cone 5,283 feet high. The island is somewhat circular in shape, with a diameter of about 4 miles. The upper part of the mountain is snow covered. Below the snow line, the slopes are dark lava, while below 1,500 feet they are covered with grass or tundra. The lower slopes flatten out and generally terminate in rocky cliffs or steep bluffs. On the W and N sides are numerous seepages on the face of the bluffs. The westernmost point of the island is an almost flat, oblong plateau 1,000 by 1,400 yards, with an average elevation of about 160 feet. The only stream on the island that may be flowing continuously is on the SE side about 1 mile S of a shack.

(635) The most prominent features along the shore are: on the NE side of the island, a small peninsula 0.4 mile long, formed by a lava-flow jutting out NE into the sea; on the SE side, a knoll forming a rocky point; on the S, a peculiar, dragon-shaped, rock dike protrudes in the shape of a curving ridge and headland at the extremity forming **Dragon Point;** off the NW point, a rock has the appearance of a partly submerged ship when viewed from the E. Also a low, offshore rock is in this vicinity.

(636) **Herbert Island,** the southwesternmost of the Four Mountains Island, is separated from Chuginadak Island by 3-mile wide Chuginadak Pass. The mountain on the island may be likened to a truncated cone, the truncated section being the rim of a crater about 1 mile in diameter. The rim is lower on the N side, and from well offshore to the N the inside of the crater is partly visible. The highest part of the island, 4,235 feet, is the S rim of the crater. The N side of Herbert Island appears fairly flat when approached from the E or W. The N side of the mountain is deeply eroded and the most abrupt. The S and W sides of the island are marked by yellow scars on the cliffs. The island is tundra- and grass-covered, with snow from fall to early summer. The lower slopes are regular and in places gentle.

(637) Along the W part of the N side of the island is a low bluff, less than 50 feet high, which gives way on the E side to high, sheer bluffs of from 200 to 400 feet. Under these high bluffs, the shoreline is mainly a boulder beach, 10 to 20 yards wide, with kelp offshore. On the flat part of the N end, however, the beach is fairly wide, and reefs, with many rocks awash, extend well offshore, and beds of heavy kelp for some distance outside the reef and foul area line.

(638) E of the northernmost point of the island is a shallow bight which may be used for anchorage in calm weather, though it has a boulder bottom and in S weather is subject to heavy seas coming from the S around the NE corner of the island. Strong currents tend to form tide rips with any sea that might be running. A cabin, at the NW end of the bight, is occupied at frequent intervals by fox trappers.

(639) On the W side of the island, near the SW corner, is a cup-shaped valley, apparently the eroded remains of a crater. The shore at the foot of this valley is a boulder beach with moderate slopes behind it. NW of the valley, and about 0.5 mile offshore, is a 60-foot rock which stands out very prominently from both N and S. A small rock is about halfway between it and the shore.

(640) The S shore of the island consists of narrow beaches at the foot of cliffs of varying heights. All offshore rocks are within 200 yards of this shore except off the SE corner of the island, where a prominent pinnacle rock 135 feet high is about 0.3 mile off the beach. The passage inside this rock is not clear, because of a rock awash, and another pinnacle 2 feet high. Back of the pinnacle rock is a distinctive reddish headland.

(641) **Chart 16500.**–Yunaska, Amutka, and Chagulak Islands are a group of islands WSW of the Islands of Four Mountains. Yunaska, the nearest, is about 14 miles from Herbert Island while Chagulak and Amutka Islands are about 3 miles apart and about 10 and 14 miles, respectively, to the W of Yunaska. The pass between Herbert and Yunaska Islands and the pass to the W of the latter are deep and clear of dangers. Navigation about these islands requires caution and frequent soundings during poor visibility.

(642) Current observations taken 1 mile E of Yunaska Island indicate velocities of about 2 knots. The greatest velocity observed was nearly 4 knots. The flood sets N and the ebb S. (See the Tidal Current Tables for predictions.) The velocity of the current changes very rapidly around the times of slack water, and the current frequently runs near its maximum flood or ebb velocity for 4 or more hours. Strong currents and dangerous tide rips are reported in the vicinity of Amutka and Chagulak Islands. In a small gale and during spring tides, the tide rips are built up by an opposing swell. A strong ebb against a small swell is reported to cause 10-foot rips in a dead calm. Currents opposing the swell and a little wind may bring about such seas and rips that small vessels are forced to proceed slowly.

(643) **Yunaska Island** is a treeless volcanic island, divided into two parts by a generally flat valley, with gentle slopes from the bluff back of the shoreline to the base of the mountains. The island is mostly grass covered below 1,000 feet, especially in the lower flats where the grass is extremely thick and matted. Weather conditions are similar to those of the Islands of Four Mountains. Yunaska is a wildlife refuge; it has been stocked with blue foxes which are now quite plentiful and tame. Two cabins are on the island. In general, the landing facilities are poor and there are not many sources of drinking water.

(644) A large crater, about 2 miles in its greatest diameter, is in the E part of the island. The highest point of the crater's rim, 1,968 feet, is found on the NW side. This point appears as a lone peak from some directions. The crater is surrounded by various conical and ridgelike hills, interspersed with small craters and lava flows. Within the large crater is a small peak, 1,804 feet high, which has its own small crater. Eruptions in this part of the island have been known to occur. A prominent lava flow extends

from the SW rim for about 1 mile to the S; it does not reach the shore. The cliffs along the S shore of this part of the island are honeycombed with caves and marked with many bridges and arches.

(645) Near the NE shore of Yunaska Island is a prominent saddle-shaped peak, 1,051 to 1,066 feet high. A bold promontory, 747 feet high, adjacent to the shore, is at the end of a ridge leading NW from the saddle-shaped peak. To the W of this ridge and N of the crater is a broad, smooth valley. The surface is composed of porous ash covered with a moderate growth of grass. The entire area is well drained by a few narrow ditches 4 to 6 feet deep. Through the middle of the valley is a long lava flow, about 20 feet high and very rough. The lava flow extends NNE to the shore where it spreads along the water's edge and where, under favorable conditions, landing might be made. A good supply of drinking water can be obtained from an underground stream about 150 yards E of and behind the westernmost corner of the lava flow. The stream flows below and around the boulders of the old beach.

(646) The NE shore of Yunaska Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the rookery which encompasses East Cove. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(647) Along the E and N coast of this part of the island the shore is bordered, in general, by steep rocky cliffs that can be scaled in several places. The most important break in the cliffs is at the foot of the lava flow. **East Cove** is a broad indentation on the extreme E end of the island. Landing sites are found in East Cove and at the head of a bight N of East Cove where some water can be had.

(648) The central valley of the island is composed of flats occasionally broken by hills and knolls, and is covered with tundra. No dependable permanent source of drinking water has been found in this valley.

(649) On the W part of the island is the highest peak, 3,119 feet. It is an apparently lifeless volcano, somewhat eroded, with remnants of craters on its side and about its base. From the W, the island appears as having grass-covered hills, with high bluffs on the N and S rising abruptly toward the summit of the two-pointed peak. The points stand out, particularly from the W, when they are not covered by clouds, which is seldom.

(650) A low bluff extends along most of the W coastline. N and S of it much higher bluffs begin and rise 300 to 600 feet in places. A 300-foot bluff, beginning about 1 mile from the NW corner of the island, extends S for about 0.5 mile. A black sand beach, about 40 yards wide and 600 yards long, is at the foot of the S half of this bluff.

(651) With the exception of this short stretch of sand beach, the W shore is rugged and has many reefs and rocks awash offshore. Many lava points extend outward from the general bluffline. The kelp is thick and extends from 50 to 200 yards outside the rocks. On the N and S ends of this shore, where the bluffline is higher, the beachline becomes a narrow, boulder shelf at the foot of the bluff, and boulders extend out into the water for some distance. A large reef extends offshore for over 300 yards from the SW point of the island. On the E side of the bold southernmost point of the island, for a short distance the cliffs drop immediately into the water without even a shelf at their foot. Several large offshore rocks exist in this locality. A large pinnacle, about 200 feet high, is about 150 yards offshore and about 1.2 miles NE from this point of the island.

(652) The shoreline around the island is rugged and has many off-lying rocks and pinnacles. Heavy kelp extends several hundred yards offshore, except off the sand beach in the middle of the S shore of the island and a few other places where there is deep water off vertical, lava cliffs. Heavy tide rips and strong currents are encountered off the points, especially those at the NE and SW ends of the island. All around the island the bottom breaks off fairly sharp, becoming more even as the 30-fathom curve is approached. Passing ships are advised to keep outside this curve.

(653) Dangerous shoals extend off the E shore of the island in the vicinity of an off-lying rock and on the S side of the island in South Anchorage.

(654) Ships should not approach within 1.5 miles of the island's shore except with extreme caution. Small craft may consider themselves safe at distances beyond 0.3 mile from shore, except where charted obstructions exist. A pinnacle rock 91 feet high is off the SE shore.

(655) Around Yunaska Island are three or four fair anchorages. **South Anchorage,** the largest bight on the S side of the island, affords protection from N as well as W weather, and to some extent also from the NE, in 13 to 15 fathoms with even bottom of rocks and cinders. The off-lying reef and low rocks in the W part of the bight must be avoided, as well as the shoal in the E part. A safe entrance may be made by heading for the middle of the long, conspicuous black cinder bluff along the head of the bight on a course **000°.** A tall shaft of rock, leaning slightly, is on the steep slope at the W end off the bight.

(656) **Local magnetic disturbance.**–Differences from the normal variation of as much as 3° have been observed at South Anchorage.

(657) **East Cove,** indenting the E side of the island, affords fair anchorage in emergency situations, for one ship, in about 10 fathoms with good holding ground of cinders and mud. The cove is small, with a dangerous off-lying ledge and rocks on the S side, and with troublesome currents. It affords fairly good protection from W weather; however, it is subject to violent williwaws during W storms, making it inadvisable to anchor there. Heavy swells reach this anchorage during SW storms. Launches may find good protection inside the kelp behind the rock reef in the S side of the cove.

(658) Protection may be found by small craft in a small but pronounced cove near the middle of the W shore of Yunaska Island, in 52°36'N., in about 3 fathoms, with a bottom of boulders. A narrow channel, about 100 yards wide, leads through the heavy kelp to the head of the cove.

(659) The best anchorage in emergency situations from S weather is found in a small cove on the N shore of the island in 170°41.5'W., in about 16 fathoms, with rock and mud bottom. A 6-fathom depth is at the E end of the cove. About 0.5 mile to the W is a smaller cove, where launches may find good protection from S weather in 3 fathoms, sandy bottom. A cabin is at the top of the high black bluff at the head of this cove.

(660) **Crater Anchorage,** a bight on the W side of the island, affords fair anchorage with some protection from E and S weather in 18 to 20 fathoms, cinder bottom. The bight is marked by a curved black bluff on its E side, the remnant of a crater. Rocks, covered 7 feet, are encountered a very short distance inside 15 fathoms in 170°46'W. which constitute a serious danger in this anchorage.

(661) **Chagulak Island** is a steep, volcanic mountain having a sharp peak, 3,750 feet high. Its rugged slopes, mainly a series of sharp, steep-descending rocky ridges marked by numerous pinnacles, terminate generally in rocky cliffs at or near the shore. It

is uninhabited and has no good landing places. The island is steep-to on all sides and soundings give little indication of danger. It should be given a clearance of at least 1 mile. The cove on the W side formed by the SW point offers some protection and a possible landing for small craft during SE weather; its approach, however, is endangered by violent tide rips.

(662) Great caution should be exercised during thick weather while navigating in the vicinity of Chagulak Island. Very strong currents make it impracticable to use soundings as a guide in thick weather. The 200-fathom curve is dangerously close in places, barring the use of depth curves for rounding the island. There are no recommended ship anchorages near Chagulak. The island is small, steep-to, and affords no protection. The two principal exceptions to the general steepness of the slopes of the ridges are at the SW and SE points of the island.

(663) The SW point is a peninsula formed by a comparatively long and flat, grass-covered ridge some 300 feet high, and the upward continuation of the ridge toward the mountain summit which has a comparatively regular and moderate slope. By reason of its low elevation, the peninsula is generally not fog- or cloud-covered during the prevailing low visibility. A slight, rounded rise near the shoulder of the ridge at the NW extremity of the peninsula, and another on the S side of the peninsula, are distinctive as they alone project above the smooth appearing tabletop of the ridge. On the S face of the peninsula below the second rounded rise is a small white scar in the shore bluff.

(664) The SE point is the extremity of a moderately descending grass-covered ridge projecting seaward to form a peninsula. The rounded NE end of the island above the rocky cliffs along the shore is grass covered and also has a fairly moderate slope.

(665) On the N part of Chagulak Island, about halfway in distance and elevation along the ridge between the summit and northernmost point, is a pronounced saddle. On the N end of this saddle is a summit, with a pinnacle, 1,905 feet high. A second smaller and lower pinnacle is just to the N. From these pinnacles the ridge slopes in a general convex form to the N point of the island. On the next prominent descending ridge to the E, is a rounded thumblike protrusion, 1,120 feet high, that is visible along the line of the NE tangent of the island. A similar thumb, 1,495 feet high, is on the W descending ridge, that forms the S boundary of a deep valley on the W side of the island. It is seen along the line of the SW tangent of the island and particularly well when snow is in the locality, as the steep sides of the feature itself are generally bare.

(666) Chagulak Island is a nesting place for whalebirds and small gulls which fly in great numbers around the island within a radius of a few miles, and in foggy weather may indicate the proximity of the island.

(667) The shore is either of large boulders, vertical cliffs, or outcropping rock. There are several off-lying features. Off the NW side are two prominent rock ledges; the inshore ledge is 55 feet high. Off the E side is a small rocky islet, steep and roughly rounded in outline at the top and 150 feet high. About 0.6 mile to the N of the rocky islet and farther offshore is a very dangerous detached ledge, it shows 18 feet above the surface and seas sweep over it in moderate weather. Several rocky islets are off the S shore and there is a low, rocky ledge off the SW point.

(668) On the S shore is a prominent, smooth, narrow slide of snow and sediment which may be distinguished well out at sea.

(669) On the W side is a 225-foot pinnacle rock. A beach landing may be made on the S side of the pinnacle. About 400 yards N of the pinnacle is a 20-foot dike that extends about 20 yards outside the high water line. Many rocks, awash and covered, are off the point 250 yards N of the dike.

(670) The N shore is very rugged, with precipitous rocky bluffs. In general, the kelp near the shores is thickest along the W shore.

(671) A submerged pinnacle having only 2 fathoms over it is just within the 100-fathom curve, 0.5 mile NW from the SW point. In this vicinity are strong, erratic currents and heavy tide rips.

(672) The small, rocky islet close to the S side of the peninsula at the SW point affords some protection for making a landing on the island. The cove on the N side of the peninsula affords anchorage for small craft in S and E weather.

(673) **Chagulak Pass** is clear except for the 2-fathom shoal mentioned in the description of Chagulak Island. It is about 3 miles wide but passage should be attempted only with local knowledge or during very clear weather. The flood current sets NW and the ebb SE. The current is probably in excess of 3 knots. Tide rips were noted through the entire pass.

(674) **Amutka Island** has a volcanic mountain cone with a crater at the summit. The highest point of the rim of the crater is 3,463 feet at its W end. On its S end is an appreciable depression of the rim. The mountain is closest to the N shore of the island, where its slopes descend directly to the shore. The base of the mountain cone proper is at about the 1,000-foot level, and to the E and W the lower slopes reform into spurs, hills, and ridges.

(675) Near the NE shore a prominent, cinder hill, 1,486 feet high rises at the side of the cone.

(676) A group of fingerlike pinnacles mark approximately the flattened, 1,000-foot level that appears as a ridge bordering the E shore. This apparent ridge descends to the S and is linked with the prominent ridge forming the peninsula at the SE end of the island, a low saddle is between them. Rising on the slopes of the mountain halfway between its summit and the SE peninsula is a group of reddish knolls. A spur projecting from the mountain toward the NW shore is marked by two summits, the inner and higher one being a conical peak 1,036 feet high.

(677) A ridge of varying elevation borders practically the entire W coast and terminates in the peninsula forming the SW end of the island. On this ridge are some distinctive summits and a decided break occurs about halfway along the W shore. The E slopes of the S part of this ridge border the large cove indenting the S side of the island and the adjacent low lava fields.

(678) A very distinctive feature on the island is a massive rectangular outcrop of rock, crowning one of the summits of the peninsula ridge at the SE end. This 615-foot-high block-shaped landmark is the highest part of the ridge. Another massive outcrop of rock, peaked in shape, appears on the summit to the N. These remarkable features are dark, in contrast to the grassy surface of the remaining part of the ridge, and may sometimes be recognized well to seaward against the 3-mile distant mountain background of the island.

(679) Amutka Island is generally covered with lava and cinders, and is black in general appearance. However, some grassy areas are on the ridges along the W side of the island, in the area to the S of the cone, and on the ridge forming the SE peninsula.

(680) During low visibility the SW peninsula of the island may be recognized by a 130-foot rock detached from the headland at its S extremity; it appears as a pointed shaft of rock when viewed from the NW and the SE sectors. Against a shore background, the rock is not discernible at a distance.

(681) **High Rock,** off the deep cove indenting the S side of Amutka Island, is a prominent landmark. It appears as a columnar monument rising 68 feet from a rocky ledge base. The top of the column is a smooth, truncated surface facing seaward and with favorable light, has a light-gray appearance, making it partly discernible from offshore against the island background.

(682) The easternmost point of Amutka Island is formed by a projecting ledge, and directly off the ledge is a rocky islet, the inshore side rises vertically to 65 feet. In this locality the shore rises abruptly in steps and thence to a jagged, ascending ridge. A prominent rock pinnacle on the ridge about 200 feet above the water level is about 300 yards from the point.

(683) The NE shore of Amutka Island bordering Chagulak Pass is in general composed of lava bluffs or large boulder beaches. Along this shore are many detached rocks. A good landing place is in the small bight about 1 mile SE from the northernmost point of the island. A temporary small-boat anchorage and landing may be found in the small and deeply indented bight around the E side of the northernmost point.

(684) The W shore of the island is composed of high bluffs meeting the slopes of the nearby ridges.

(685) A trapper's cabin is on the shore of the bight on the S side of the island; some water is available in this locality.

(686) Almost the entire coast of Amutka Island is fringed with detached rocks and ledges of various description. Off the S coast of the island an area of broken bottom extends from the SW peninsula for over 1.5 miles in a SE direction; High Rock is in and near the middle of this area. The section between High Rock and the peninsula is extremely foul and passage across it should not be attempted. The outlying section has a depth of 3½ fathoms about 0.5 mile SE of High Rock.

(687) An area of broken bottom also extends in a W direction from the SW peninsula for about 0.8 mile, in which a 2½-fathom depth was found 0.3 mile W from the S end of the peninsula.

(688) Along the W shore abrupt changes in depth occur within the 20-fathom curve, which approximately parallels the shore at a distance of about 0.5 mile.

(689) From the middle section of the NW shore an area of irregular bottom extends 0.8 mile to the 20-fathom curve, thence there is an abrupt deepening of several fathoms to seaward.

(690) From the northernmost point, an area of broken bottom with shallow depths less than 5 fathoms extends for about 0.6 mile in a NW direction. Off each of the several points along the NE shore are small detached shoals of 1½ to 3 fathoms. Along the E shore broken bottom is within the 20-fathom curve that is 0.8 mile from the shore near the middle of this section. From the SE peninsula of the island, a shallow area with depths less than 8 fathoms extends in a S direction for about 0.4 mile.

(691) As in the case of Chagulak Island no satisfactory anchorages are found in the vicinity of Amutka Island. During storms, the gales draw around its entire coastline to the lee side, causing violent gusts of wind successively from opposite directions along the shore. Also, no section of the coast is free of strong currents, tide rips, and seas that sweep around the island. The bottom, generally of gravel, affords only fair holding ground.

(692) The best anchorage for SW weather is in 18 to 20 fathoms, gravel bottom, about 1 mile E of the northernmost point of Amutka Island, off the cove in that locality. Attention is called to the detached 1- to 2-fathom shoals off the several points close to this anchorage. The strength of the current here is less than elsewhere along the NE coast.

(693) In SE weather anchor in 18 to 20 fathoms, gravel bottom, about 0.8 mile W of the northernmost point, or in 18 to 20 fathoms off the middle of the cove about 2 miles SE from the northernmost point. In coming to anchor at the latter location, a strong NE current may set the vessel toward the foul areas that extend from the point of the N end of the cove, and a range on the slope of the shore ridge should be selected and held in order to avoid this.

(694) In NW weather anchor in **Traders Cove,** in 24 fathoms about 0.8 mile E from the SE point of the island. Care must be taken to avoid the dangerous shoals just within the 20-fathom curve.

(695) **Local magnetic disturbance.**–Differences of as much as 6° from normal variation have been observed in Traders Cove.

(696) Overnight anchorage is not recommended in the large cove on the S side of Amutka Island. Strong winds from the SE may make up suddenly and the approach and anchorage are bordered by dangers.

(697) A remarkable bottom configuration has been noted in the area to the E of High Rock. With a general depth of some 35 fathoms 1 mile off the S side of the island, the depth may increase rapidly to 70 fathoms as the shore is approached. There is a considerable basin of about 50 fathoms, about 0.8 mile in length from E to W, this depth being found about 200 yards NE from High Rock. The 3½-fathom shoal in this vicinity is on the SW rim of this basin.

(698) As in all other parts of the Aleutian Islands, currents around Chagulak and Amutka Islands are strong and somewhat erratic in their nature. The general flood direction is to the N, and the ebb to the S. Tide rips make up swiftly and furiously at times. While the channel between the two islands is clear, tide rips give the impression of heavy seas in shoal water. On the flood, the current seems to divide on the S side of Amutka Island near the 3½-fathom shoal previously mentioned where the seas are very confused. The currents rejoin near the N point of the island and the reverse action seems to take place on the ebb.

(699) Similarly, the strongest currents along Chagulak Island are found near the SW point of the island, the current dividing somewhere near the center of the S shore and rejoining on the N side of the island. The strong currents are particularly noticeable at times along the E side of this island where the general N trend of the current is unobstructed.

(700) The currents vary considerably in velocity, and they probably often exceed 3.5 knots.

(701) Tide rips are conspicuous off all points, their violence being somewhat in the following order: Strongest, along the W part of Chagulak Island and in the pass between the two islands; around the SW point of Amutka Island and near the 2½-fathom shoal; around the N point of Amutka Island; around the SE point of Amutka Island, and around the SE point of Chagulak Island.

(702) **Chart 16012.–Andreanof Islands** extend in a 310-mile chain from Amutka Pass to Amchitka Pass.

(703) **Chart 16480.–Amutka Pass,** often called the **Seventy-second Pass,** is a 35-mile-wide clear passage between Amutka and Seguam Islands; depths are from 55 to 300 fathoms. Both islands may be seen across the full width of the pass in fair weather; their shores should be given a clearance of not less than 1 mile.

(704) **Seguam Island** is rocky and cinder covered, has numerous lava flows, and is steep-to on all sides. It has, however, several good landing places and an abundant water supply. Irregular mountain masses are on both the E and W ends of the island and a saddle is in the E central section. The formation is volcanic and the peaks are rocky, extinct craters.

(705) The mountains on the W end are higher; **Pyre Peak,** 3,458 feet, in the W central part, is the highest on the island. The highest peak on the E end is a jagged pinnacle on a small crater within a larger crater and is 2,768 feet high. The mountains on the W end of the island are more ragged. The N coast is low rock and grass bluffs. The other coasts are steep and high, with the peaks close to the coast. The two good anchorages are Finch Cove on the N, and Lava Cove on the S. Numerous pinnacles are close to shore, the most prominent are those off the NW point, the highest 98 feet.

(706) The precipitous E end of the island, except for a small peninsula, is at the base of a volcanic mountain having a crater within a crater, 0.5 mile in diameter, at its summit. The summit has a confusing appearance; a pronounced rise along the N rim of the main crater is 1,930 feet high and appears as a sharp peak when viewed endwise. Also a pronounced rise is along the N rim of the inner crater which is 1,934 feet high. The S rim of the inner crater merges with that of the main crater and is 1,820 feet high.

(707) Relatively shoal-water areas extend off all the principal points of Seguam Island, and are usually marked by breakers in bad weather. Kelp grows profusely in most of these areas.

(708) Currents around Seguam Island are strong and very erratic. As around Amutka and Chagulak Islands, the general flood direction is N, with the ebb S. On the flood, the current seems to divide somewhere near Turf Point, and to rejoin near Finch Point on the N. The reverse appears to take place on the ebb.

(709) Tide rips are severe off many points; they make up suddenly and furiously, and are dangerous to small craft. Passage through the rips by small boats should not be attempted unless the operator is familiar with the danger. The worst rips are found along the W end, with lesser ones off Moundhill Point and Finch Point. These are all conspicuous and while they seem to indicate shallow water by their whiteness, they make in deep water and so are no menace to navigation for the larger ship.

(710) Strong currents and tide rips occur around the E end of the island.

(711) On the S end of the E coast is **Moundhill Point,** a small, rounded peninsula that forms a very important landmark during the prevailing low visibility. The peninsula is a mound-shaped hill, 465 feet high, and has four, small, rounded protuberances at its summit. The easternmost of these is separated from the remainder of the group by an appreciable distance and by an apparent depression in the top. Rounded protuberances also characterize the slopes of the hill. The hill is separated from the mountainous mainland by a draw about 100 feet high at the neck of the peninsula. At the water's edge, the hill slopes descend to form almost vertical cliffs of rock. A fair landing is on the N side of the neck. Fair anchorage for small craft is in the cove on the S side, that is marked by three tall pinnacles near its SW end.

(712) Several lumps of about 3 fathoms are in the shallow area 0.2 to 0.5 mile E of Moundhill Point. It is advisable to round the cape by at least 1.5 miles.

(713) At the N end of the E coast the land projects to seaward forming prominent **Wharf Point,** which resembles a wharf or pier from a distance. The point has a more or less flat top, 50 feet high, and the bluffs on its three sides are approximately rectangular, forming two distinctive corners at the extremity.

(714) **Finch Cove** is an indentation 2 miles in extent along the NE side of Seguam Island; its N extremity is Finch Point. A long, rocky point formed by a spur divides the cove into two parts. At the head of the cove, N of the dividing point of land, is an 0.8-mile stretch of sand beach providing good landing. The approach to the middle section of this beach is apparently free of rocks and the depths decrease gradually, making this a favorable site for beaching a vessel in an extreme emergency. The N half of this part of the cove is foul with rocks of various description, among which is a 58-foot elevated, block-shaped rock. Along the shore of the cove E and W of the dividing point of land are stretches of high, prominent cliffs. The W stretch is about 0.3 mile long and 300 feet high, and the E rounding stretch of cliff is about 0.5 mile long and 500 feet high. To the E of the latter is a deep valley that extends inland. A cone-shaped peak, 1,447 feet high is 1.5 miles inland from the cove.

(715) Near the center of Finch Cove, an area of extremely broken bottom with shoal depths of about 4 fathoms extends out from the dividing point for more than 0.3 mile. In the S part of Finch Cove, along the shore E of the dividing point, are heavy kelp beds.

(716) Finch Cove offers good protection in SW weather. The survey ship EXPLORER remained at anchor in Finch Cove during a storm in 1952, with S winds up to force 12. The ship anchorage is in 14 to 17 fathoms off the center of the N bight. Enter on course **274°,** heading for the 58-foot elevated, block-shaped rock. Anchor on this bearing (a cross current may be experienced) and on cross bearing 191° to the left tangent of the dividing point of land. Tidal currents setting NW and SE have been observed. The NW current has a velocity of about 2 knots. The SE current has a velocity of about 0.5 knot. A 4-fathom spot is 0.3 mile S from this anchorage.

(717) **Local magnetic disturbance.**–Differences of as much as 7° from normal variation have been observed in Finch Cove.

(718) **Finch Point** is the dividing point between the N and NE sides of Seguam Island. It is formed by a broad, gently sloping ridge, the shore extremities of which break off into cliffs and ledges. Detached rocks of various descriptions lie about the point and these are particularly numerous at its N extremity. Directly at the N extremity, an 80-foot elevated, massive rock is a prominent landmark, when viewed along the line of the NE tangent. In this direction it appears vertical at the sides and its irregular top is roughly in the form of a gable. The outermost rock to the N is lime-covered but it is small and only a few feet high.

(719) At the northernmost part of Seguam Island just W of Finch Point a large area of broken bottom extends more than 1 mile offshore. Several lumpy spots of about 8 fathoms are well offshore in this area.

(720) The N shore of Seguam Island is irregular; the beaches are principally of lava or boulders and in general cliffs or grass-covered bluffs are directly back of the beaches. The cliffs are comparatively low. The slopes from the clifftops are covered with a heavy growth of grass and rise gently toward the high interior regions. Numerous gullies break up the terrain and are approximately normal to the general trend of the coast. Several waterfalls are along this coast.

(721) A dangerous 2½-fathom pinnacle rock with surrounding depths of 23 fathoms close-to, is about 1 mile off the N shore of Seguam Island. The danger is not marked by kelp.

(722) **Saddleridge Point** is the northwesternmost point of Seguam Island. The small rise directly inshore from the saddle, is a definite summit from all offshore directions, but not particularly prominent. A rocky islet 98 feet high, about 0.2 mile NE from the point, and several smaller intervening rocks obscure the extremity of the point when viewed from the NE. A narrow cliff 231 feet high, facing seaward and topped by a small grass-covered mound, rises at the inshore end of a long, narrow, projecting ledge 1.7 miles E from Saddleridge Point.

(723) A mound 80 feet high, resembling a haystack, is 3.7 miles NE from Saddleridge Point. The mound has the appearance of an island but is connected to the shore. A 1-mile stretch of sand and cinder beach extends to the SW from this vicinity, and there is a waterfall about 0.2 mile NE from the mound.

(724) From the N rock off Saddleridge Point, foul ground extends N for 0.2 mile.

(725) Very favorable anchorage for S weather may be had along the N central section of the coast of Seguam Island 1.5 to 3 miles E of Saddleridge Point. The ship anchorage is 0.5 to 0.6 mile offshore in 16 to 18 fathoms, sand and gravel bottom. In coming from the E care must be taken to avoid the 2½-fathom pinnacle 1 mile offshore; passage between the pinnacle and the shore is not recommended.

(726) Saddleridge Point is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the point. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(727) **Camel Islet** is about 0.5 mile off the middle of the NW shore of Seguam Island. It is a massive rock, 53 feet high, and its top from the N or S resembles a camel's hump.

(728) The NW coast, from Saddleridge Point to the W end of the island, a stretch of 5.5 miles, is in general a boulder beach directly in front of irregular cliffs ranging from 200 to 600 feet high. In some places the cliffs rise abruptly from the water's edge. The slopes from the tops of the cliffs to the mountainous interior are decidedly steeper than those E of Saddleridge Point; also, the draws and valleys are steeper and occur at less frequent intervals. About 1.2 miles N from the westernmost point of the island, the slope is very steep and the cliffs are especially high. The waterfalls go dry in late summer. Numerous detached rocks are found off this coastal stretch.

(729) Between the westernmost point of Seguam Island and a high, dome-shaped, detached rock about 1 mile to the N is a deep valley, with gentle ascending lower slopes, that extend inland 1 or 2 miles.

(730) Along the W end of Seguam Island very irregular bottom is within the 20-fathom curve which follows the coast at a distance of about 0.5 mile. A reef is about 0.3 mile off this end, which is marked by a low rock, 4 feet high, discernible for some distance with a quiet sea. A depth of 3¾ fathoms was found 0.2 mile NW of the reef. Strong currents and tide rips occur in this locality.

(731) From the W end of the island the coast trends SE for about 1.5 miles to **Rue Ledge.** This offshore rocky ledge, 36 feet high, is conspicuous when viewed along the SW tangent of the island. The inshore side of the elevated part of the ledge has vertical corners; from here the top slopes to the offshore end. Halfway between this ledge and Turf Point, 2.6 miles to the E, is an off-lying rocky islet which is marked near its offshore end by a cylindrical pinnacle rounded at the top. A waterfall over the shore cliff is about 0.2 mile NE from this pinnacle.

(732) **Turf Point,** the southernmost point of Seguam Island, is a comparatively low, broad, and extensive grass-covered projection terminating in a rounding bluff. The top of the point is flat and then rises gently to the steeper inland slopes, which on either side of the point terminate in bold rocky bluffs, making the point conspicuously low by contrast. A foul area fringes the rounding point. W of Turf Point, the S shore of Seguam Island is high and precipitous. The cliffs are close to the rocky beach and in places overhang it. The bordering mountains are high; grass extends from the cliffs to about 1,100 feet.

(733) From Turf Point an area of broken bottom extends S for 0.7 mile to the 20-fathom curve, thence abruptly deepening to over 40 fathoms.

(734) On the south shore about 5 miles NE from Turf Point is **Lava Point,** a broad, jagged, and comparatively low point forming the terminus of an extensive lava flow. A narrow bight, but deep in extent, indents the middle of the extremity of the point. **Lava Cove,** immediately W of Lava Point, extends for 2.5 miles to a rounded gravel point fringed with covered and detached rocks. The gravel point is formed by a short broad spur 196 feet high, projecting from a regular, grass-covered mountain slope that descends to shore cliffs on either side of the point. At the head of Lava Cove is a decided indentation in which are several streams and a 0.8 mile stretch of sand beach. An ocean swell generally makes landing difficult. The remaining shore of the cove is composed mainly of jagged projections of rock or lava cliffs of moderate elevation. Curtains of waterfall at two places about 0.2 mile inland from the E end of the sand beach are visible from the cove. A row of pinnacle projections marks the near-shore ridge, 335 feet high, between Lava Point and the curtains of waterfall.

(735) From the point at the W end of Lava Cove an area of broken bottom extends SE for 0.7 mile, with a depth of only 1¾ fathoms 0.4 mile off the SE side of the point.

(736) On the S side of Seguam Island, Lava Cove and the next large cove to the W offer good protection in N weather. The anchorage in Lava Cove is in 14 to 17 fathoms, cinder and gravel bottom, off the indentation at the head of the cove. It has little or no current. Enter on the N course heading for the E half of the sand beach at the head. In coming from the W, the broad gravel point at the W end of the cove should be given a wide berth.

(737) The SE coast of Seguam Island from a point about 1 mile E of Lava Point for about 4 miles to Moundhill Point is dominated by a chain of three mountain peaks over 2,000 feet high and a very distinctive mountain 1,410 feet high, close to the shore in 172°23'W. The shore slopes of these mountains generally terminate in steep, rocky cliffs, and the coast has a bold appearance. A steep bluff rising to 690 feet marks the promontory near the three high pinnacles in the SE part of the cove at the E end of this mountainous stretch. The upper reach of this bluff overlooks the draw back of Moundhill Point.

(738) Off the middle part of this bold coastal stretch is a group of five rocky islets; the outer islet is 55 feet high near its inshore end where it drops almost vertically to form its NW side. The area between this group of islets and the shore is foul.

(739) The 1,410-foot peak, close to the shore about 1.5 miles W of the group of islets, has a steep and rugged seaward face and a definite peak. With N winds this mountain may be free of clouds while those in the background are covered. A small cave about 5 feet deep with an almost rectangular entrance is at the foot of this mountain near the shore. The cave is prominent when the light illuminates the surrounding yellow portion of the rocky cliff.

(740) About 0.2 mile SW from the cave, a chain of rocks extend offshore for a distance of about 230 yards. The inshore rock is 110 feet high while the offshore rocks are low in comparison.

(741) An area of broken bottom with shallow depths is within 0.3 mile of the section of the SE shore of the island 0.6 mile to 1.4 miles from Moundhill Point.

(742) **Seguam Pass** is between Seguam and Amlia Islands. It has been regarded with suspicion, and a sailing vessel has been lost on Agligadak Reefs, on the SW side. The pass is about 12 miles wide, and it is reported to have strong currents, rips and overfalls, but no offshore dangers.

(743) Vessels have reported high breaking seas in Seguam Pass. The bottom is irregular, the currents strong, and tide rips may be encountered at any place, but particularly near the shore. The flood current sets to the NNW and the ebb to the SSE; probable velocity exceeds 4 knots. The pass is not recommended.

(744) **Chart 16480.–Amlia Island,** on the W side of Seguam Pass, is 40 miles long and has a greatest width of about 8 miles. On the island are a few small lakes. A chain of sharp peaks extend the length of the island, but none is especially distinctive. The E end of the island is visible for a considerable distance and is a good landmark in fair weather; it has a straight profile at a moderate elevation and drops to the sea in a precipice. The point should be given a berth of several miles because of the rocks and reefs to the E and S. The unsurveyed areas around the island should be approached with caution.

(745) **Agligadak Reefs** extend about 4 miles from the E extremity of the island.

(746) **Agligadak Island, Tanadak Island,** and **Sagigik Island** are small islets off the E end of Amlia Island. Their only importance is as dangers to navigation.

(747) Agligadak Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the entire island which encompasses Tanadak and Sagigik Islands. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(748) **Sviechnikof Harbor** is on the S shore of Amlia Island about 15 miles from the E point. The entrance is about 0.2 mile wide and is difficult to make out, and should be attempted only in clear weather. Sagigik Island, about 9 miles E, and the pyramid peak to the right of the entrance, may be recognized. The harbor extends about 2 miles in a NNW direction and has an average width of about 0.3 mile. It can be entered without difficulty, is well sheltered, and has good holding ground. Excellent anchorage is available in the N end of the harbor in 10 fathoms, soft bottom. The W side of the entrance should be favored until past the long island and the rocks and reefs on the E side.

(749) **Chalugas Bay,** just W of **Cape Idalug** on the N coast of Amlia Island, is a small harbor reported suitable for small boats only; however, the anchorage for small vessels in 20 to 22 feet is just off the entrance.

(750) The bight on the E side of Cape Idalug offers a lee in S weather for vessels of all sizes. The recommended anchorage for deep-draft vessels is in 9 fathoms, soft bottom, at the entrance to the inner basin.

(751) **Chart 16490.–Amlia Pass,** a 1-mile-wide strait between Amlia Island and Atka Island, has depths of 5 to 22 fathoms through a narrow 400-yard passage restricted by a reef that extends 1 mile off the Atka Island shore. The pass should be used only by small light-draft vessels at slack water because of the strong and complex currents.

(752) **Mid Reef,** a high part of the reef that extends from Atka Island shore, shows at all times, but is awash in extremely heavy weather. Other small areas may occasionally appear at extreme low water.

(753) The shores on both sides of Amlia Pass are steep, rock bluffs rising to low hills. Kelp grows along the shores. A ledge extends 100 yards outside the bluff line at **Eddy Point,** the westernmost point on Amlia Island. Deep water is outside this ledge and off the shore at **Swift Point,** Amlia Island. At **Pinnacle Point,** Amlia Island, is a prominent pinnacle on the shore with an 80-foot off-lying pinnacle immediately SE.

(754) A current of 10 knots has been observed in Amlia Pass; when the current is strong large tide rips usually occur. The current floods N and ebbs S. In general, tide rips exist in and outside of the N end of the pass during the flood, and in and outside of the S end during the ebb. When the current is running, small tide rips exist over the reef. During strong currents, heavy swirls exist in the pass and its approaches, the greatest intensity being near Eddy Point.

(755) N of Eddy Point the current floods NE and ebbs SW, setting a vessel off course just N of the pass. Duration of slack is about 10 minutes; however, there is often a period of 1 to 3 hours when the current is not strong, and there are practically no tide rips.

(756) Heavy tide rips that extend several miles NE of Amlia Pass have been observed with a moderately heavy swell from the NE. A pinnacle, covered 4½ fathoms, is 1.5 miles NE of Eddy Point, and 0.6 mile from the N shore of Amlia Island. There are probably other dangerous pinnacles in this area.

(757) In approaching Amlia Pass from S or N vessels should stay in the area of charted soundings to avoid reported dangers off the islands. Courses through Amlia Pass should pass 0.5 mile off Pinnacle Point, 200 yards off Swift Point, and 400 yards off Eddy Point to avoid the reef on the W side of the pass. Extreme caution is necessary to avoid the 2½-fathom reef 500 yards W of Swift Point.

(758) **Chart 16480.–Atka Island,** separated from Amlia Island by Amlia Pass, is 10 by 50 miles in extent and the largest of the Andreanof group. **Korovin Volcano,** 4,852 feet high, is 3 miles inland from the N end of the island. The formation of the island is volcanic and similar to the other islands of the Aleutian Chain. Many species of birds frequent the island, but the island and adjacent islets are reported to be overrun with rats.

(759) Several peaks varying in elevation to 3,200 feet extend along the interior of Atka Island. These peaks are seldom visible because of fog, mist, and low ceiling. A 1,100-foot-high peak at the W end of the island is frequently clear. Because of the prevalent weather conditions, extreme caution should be exercised in approaching the land. There is considerably less fog and mist during the colder months when the higher peaks show more frequently. Currents are weak, except at the passes E and W of the island.

(760) There are several anchorages along the S coast of Atka Island, but care should be exercised in approaching the coast because of the numerous rocks and shoals, and currents. A rock, 3.5 miles offshore and 18 miles from the W end, is covered ¾ fathom and breaks in moderate seas. Several shoals with least depth of 10 fathoms, as much as 5 miles offshore S of Vasilief and Kobakof Bays, show current boils, slicks, and tide rips during calm weather. Other shoals with lesser depths are farther inshore.

Fairly strong E-W currents have been observed S of Sagchudak Island to S of Cape Tadluk.

(761) There is a suitable small-craft anchorage at the E end of Atka Island, 3 miles W of Amlia Pass in 52°06.7'N., 174°09.3'W., in 18 to 20 fathoms, sand and shell bottom, but the swinging room is limited and the water is quite deep. The off-lying islands and rocks give protection from SE seas but the anchorage is open to S and SW weather. To reach the anchorage from 52°05.0'N., 174°08.3'W., make good a course of **000°** for 1.7 miles, then change course to **270°** for 0.7 mile to anchorage.

(762) **Vasilief Bay,** on the S side of Atka Island 10 miles W of Amlia Pass, offers anchorage in 25 to 30 fathoms, fine sand with broken shell bottom, at 52°06.0'N., 174°20.0'W. The offshore islands offer some protection from S seas. This anchorage should be entered from the SE, keeping 0.5 mile E of the offshore islands. There is a rock awash in 52°02.4'N., 174°21.0'W.

(763) **Kobakof Bay,** 15 miles W of Amlia Pass, offers excellent anchorage in all but moderate to heavy seas. Anchorage in 25 to 30 fathoms, mud and sand bottom, is available at 52°03.7'N., 174°28.6'W. The NW arm of the bay offers protection from S seas in 20 to 30 fathoms, but is limited in swinging room. In entering the bay from a point midway between **Sagchudak Island** and **Amtagis Island,** steer a midchannel course of **347°** until the point of land ahead is 0.7 mile distant, thence a course of **293°** to the anchorage. Some fairly strong rotary currents may be encountered along the E side of Sagchudak Island.

(764) The pass on the N side of Sagchudak Island is generally foul, containing kelp and shoal areas which break in a moderate swell. Only small craft having local knowledge should use this pass.

(765) **Explorer Bay,** 18 miles W of Amlia Pass, offers a protected anchorage in any weather in 11 to 13 fathoms, fine sand bottom. However, there is limited swinging room and the entrance is through a narrow channel between dangerous rocks and shoals. In entering from a position at 52°00.0'N., 174°30.4'W., steer a course of **000°** until the N end of Sagchudak Island bears 090°, then shape course to **327°,** keeping 0.3 mile off the point of land on the W side of the bay, until the SE point of the W arm of the bay bears 216°, distant 0.5 mile, thence on course **277°** for 0.4 mile to the anchorage. This course passes over or just N of an 8-fathom shoal, 0.2 mile S of a 4-fathom shoal, and 0.1 mile N of a 6-fathom shoal. The area outside the channel, on the W side of Sagchudak Island, is very broken with scattered rocks which generally are apparent to the navigator.

(766) **Beaver Bay,** 23 miles W of Amlia Pass, offers anchorage for small craft in the outer and W arm. Protection from all except SE seas is available in 15 to 20 fathoms, fine sand with broken shell bottom. Entrance to the anchorage must be made by keeping to the SW of the small islands in the entrance.

(767) The small bays between Explorer Bay and Beaver Bay offer some protection for small vessels, but the bottom is generally broken and the lee afforded from onshore winds in negligible.

(768) **Tillamook Cove,** 30 miles W of Amlia Pass, is of little value as an anchorage because it is open to the sea and has poor holding ground. A more comfortable anchorage is in 13 fathoms just outside the cove. A 40-foot pinnacle rock marks the seaward end of the W side. A shoal extends some distance seaward of the point of land marking the E side of the entrance. The W side of the cove is practically vertical to about 100 feet, then slopes steeply to over 1,000 feet. At the head of the bay is a black sand and volcanic ash beach. The E shore is characterized by rocky ledges; the land rises to about 300 feet from the water to a relatively level shelf before rising to the mountains farther inland. There is considerable surf with only a slight swell setting into the cove.

(769) **Sergief Bay,** 35 miles W of Amlia Pass and 13 miles E of Cape Kigun, is a suitable anchorage except during strong S winds; holding ground is probably poor. The gently sloping beach at the head of the bay is black sand or volcanic ash. In entering the bay from a position in 51°59'N., 175°00'W., hold a course of **000°** until the end of the W entrance point is abeam, then shape course to pass 300 yards off the rock awash in 52°01.6'N., and after passing this rock steer **315°** for the head of the bay.

(770) Anchorage in 20 fathoms, fine sand bottom, is near the center of the small bight 10 miles E of Cape Kigun, the W end of Atka Island. A point and off-lying reefs offer some protection from W seas. Vessels can also anchor in 17 to 20 fathoms, sand with broken shell bottom, 0.5 mile offshore near the center of a small bight 3 miles E of Cape Kigun.

(771) **Chart 16490.–Nazan Bay,** indenting the E coast of Atka Island N of Amlia Pass, provides good anchorage. The greater part of the outer harbor is partially protected, but strong winds draw through the low land between Nazan and Korovin Bays. The bay is subject to heavy swells and is at times unsafe for small boats.

(772) **Cape Kudugnak,** the N point of Nazan Bay entrance, is a 200-foot rounded, grassy knoll rising abruptly from the shore. The island behind the cape rises uniformly for 2.5 miles to a 2,687-foot mountain. **Uyak Island,** 3.5 miles WSW from Cape Kudugnak, is 100 feet high, rounded with grass top and rocky bluffs. Five silver-colored radio masts about 0.2 mile N of the cape are reported to be conspicuous landmarks.

(773) **Palisades Point,** 3.5 miles W of Cape Kudugnak, has rocky bluffs with a 375-foot plateau that extends inland to the mountains. A 60-foot-high rock is close to shore just W of the S end of the point.

(774) **Cone Island,** near the W part of Nazan Bay, is 83 feet high; the northernmost of the three islands has three remarkable pinnacles on it.

(775) **Bolshoi Islands** are a group of grass-covered islands along the S shore of Nazan Bay. The westernmost and largest forms the E side of the inner harbor at Atka. A waterfall on the S shore of the bay, 1.7 miles SE of Atka, is prominent.

(776) Anchorage for large vessels is available in the outer harbor W of Palisades Point in 35 to 17 fathoms; vessels can also anchor close to the N shore of the bay E of the point. Anchorage W of Bolshoi Islands in the inner harbor in 6 to 12 fathoms is sheltered, but is limited in area to only small vessels.

(777) The tide in Nazan Bay is chiefly diurnal, the range being 3.3 feet. The harbor in the W part of the bay will often be clear when there is fog in the entrance.

(778) **Local magnetic disturbance.**–Differences of as much as 5° from normal variation have been observed in Nazan Bay.

(779) Vessels proceeding to anchorage in the W part of Nazan Bay should pass N of Uyak Island taking care to avoid the 5-fathom rock 0.7 mile E of the island. Small vessels continuing to the inner anchorage should pass midway between the highest part of the S islet S of Cone Island and the high-water rocks at the NW point of Bolshoi Island.

(780) Trading vessels bound through Amlia Pass use a channel S of the Bolshoi Islands, but this route is not recommended without local knowledge because it is near many covered and uncovered rocks.

(781) **Atka,** at the W end of Nazan Bay behind Bolshoi Islands, is not visible until after the largest island is passed. Most of the village population is employed in fishing and sealing at Pribilof Islands. Mail is delivered by air from Anchorage. Water is available from a stream near the village. Small boats can be beached on a well-sheltered tide flat behind Bolshoi Islands, 0.4 mile SE of the village.

(782) **Chart 16480.**–The N coast of Atka Island is indented by numerous small bays. Most of the points are bold headlands rising to sheer 300- to 800-foot knobs or heads, and then rising more gradually to the peaks farther inland. The land area is treeless and is covered with tundra to about 1,000 feet, above which there is little vegetation. Bluffs generally extend into the bays and bights, but as a rule the heads of the bays are low, with sand, gravel, or small boulder beaches, back of which valleys carry into the interior. A low pass crosses the island between Nazan Bay and Korovin Bay. SW of the pass the island is lower and runs off to the narrow W end.

(783) A high conical peak is near **Cape Shaw,** the E extremity of Atka Island. The slopes of the Korovin Volcano mountain break off in a rocky escarpment at **North Cape,** the N end of the island.

(784) **Chart 16487.–Korovin Bay,** on the N side of Atka Island across a low pass from Nazan Bay, is a good anchorage except in heavy W weather. The shores are bold, sheer cliffs bordered by numerous pinnacles, except for the low gravel beach at the head and low land near a lagoon on the N shore. The entrance points, **Cape Korovin** on the N and **Egg Point** on the S, are bold headlands rising abruptly to mountain ranges. Egg Point terminates in a prominent 135-foot-high pinnacle rock at the shore.

(785) Korovin Bay has depths of 80 to 10 fathoms to within 0.6 mile of the shore, except for rocks about 2 miles from the E end. The higher of these two rocks bares 2 feet and can be used as a navigational aid. A prominent 100-foot-high pyramidal-shaped pinnacle rock is near the head of the bay about 0.2 mile off the S shore.

(786) Anchorage is available in the NE part of Korovin Bay in 40 to 10 fathoms with gray sand bottom, fair holding ground. The small coves on the S shore provide shelter for very small vessels, but the swinging room is limited. The bay is not sheltered from the SE or SW because strong winds howl through the draws and ravines which cut the hogback on Atka Island; caution is necessary to avoid being forced onto the N shore. Oftentimes, when it seems as though the winds coming out of the draws in a SE direction are the prevailing winds, it will be found that outside the bay the general winds are SW.

(787) **Sarana Cove,** indenting the S shore of Korovin Bay 4 miles E of Egg Point, is foul and should not be attempted by any craft without local knowledge. **Martin Harbor,** 6 miles E of Egg Point, is small but offers good protection for small craft in all weather at the head in 11 fathoms with mud and sand bottom.

(788) **Egg Bay** is separated from Korovin Bay by the rugged cape that terminates in Egg Point. The shores of Egg Bay are mountainous, with humpy, grass-covered slopes. At the head of the bay is **Egg Island,** steep sided, round topped, and grass covered.

(789) **Starichkof Reef** is 1.5 miles W of Egg Point. The easternmost and largest islet is a vertical-sided block of rock 61 feet high. The second most conspicuous rock is a spurlike pinnacle about 0.5 mile NW of the block-like rock. There are several other rocky islets, as well as a number of reefs or shoals in this area.

(790) A dangerous 2½-fathom shoal is 0.3 mile N of the islets and 1.6 miles W of Egg Point.

(791) Two shoals SW of Starichkof Reef make it inadvisable to enter Egg Bay from the W side of the reef. One shoal, having a least depth of 2¼ fathoms, is 0.5 mile SW from the W group of islets. The other shoal, having a least depth of 3¾ fathoms, is 0.8 mile SW from the same islets.

(792) A 4½-fathom shoal is 0.3 mile offshore on the E side of the bay, 0.8 mile S of the entrance at Egg Point.

(793) Several other shoals having least depths of 8 to 12 fathoms are near or in the bay. They should be avoided.

(794) Numerous rocks and reefs border the shores of Egg Bay. The E shore for the first 2 miles S of Egg Point is especially dangerous and should not be approached closer than 0.3 mile.

(795) A pinnacle rock with a least depth of 3 feet is 250 yards off the NE shore of Egg Island.

(796) Approach Egg Bay on a course of **180°** to pass 0.5 mile E of the easternmost islet in Starichkof Reef. When this islet is slightly abaft the beam, change course to **134°,** heading for the left tangent of Egg Island. When 0.5 mile from Egg Island, haul to the left and round the island, keeping approximately in midchannel.

(797) Anchorage for medium-draft vessels is found NE of Egg Island in 20 to 25 fathoms. The bottom is soft, fine, green sand, with rather poor holding ground. The lower end of Egg Bay offers fair protection in both N and S weather. The least swell is found S of Egg Island.

(798) From Egg Bay to Banner Bay the shoreline is irregular and has several small bights. The bights, as well as the approaches to them, are foul. This area should be avoided.

(799) **Banner Point,** on the NE side of the entrance to Banner Bay, is lined by bluffs. Above the bluffs the land slopes upward to a 1,590-foot peak about 1 mile from the outer end of the point. A grass-covered islet, 165 feet high, is 0.3 mile NE of Banner Point.

(800) A rock that uncovers is 0.5 mile N of Banner Point; 0.1 mile N of the rock is a 3-fathom shoal; 0.2 mile NW of the rock is a 5-fathom shoal. Kelp grows on both shoals.

(801) **Banner Bay** is about 3 miles long and 0.8 mile wide. The trend of the bay is E and W. The shores are bold but free of dangers except for two groups of rocks, 2 and 25 feet high, in the NE half of the entrance, and for an 8-fathom spot 0.3 mile off the S shore, 1 mile inside the entrance. Anchorage is available 0.6 mile from the head of the bay in 33 fathoms, which is the general depth in this part of the bay. Strong winds pull through this bay and as a rule, are diverted to blow in or out of the bay.

(802) Approaching Banner Bay, a large group of rocks, from which a foul area extends 0.8 mile S, are about 1 mile N of the entrance and 0.6 mile off the shore of Atka Island. The highest of these rocks, 57 feet and grayish in color, serves as an aid in reaching the bay.

(803) To enter, from a position with the NE point of Salt Island bearing 290°, distant 0.5 mile, steer **156°,** heading for the highest bluff (also the highest nob on a ridge of low hills) at the S point of the entrance to Banner Bay. Hold this course until the group of

rocks in the entrance to the bay bears 090°, then haul to the port into the bay on midchannel courses.

(804) **Salt Island,** about 2.5 miles W of Banner Point, is a valuable aid to the navigator in approaching Atka Island. This island is 1.3 miles long in a NE and SW direction and about 0.5 mile wide. The highest point of the island, 543 feet, is in the NE half. All shores are rocky and bold, the NW shore and NE and SW points being particularly so, with sheer cliffs over most of the shoreline, that is fringed by high pinnacle rocks. These pinnacles are particularly evident when the island is viewed from the SW or NE. The island is covered with grass and tundra. A small cabin is near the E end of the S shore.

(805) A group of bare rocks are 0.5 to 1 mile SE of Salt Island. The highest of these is a light-colored, gray pinnacle of 38 feet. A reef covered with heavy kelp obstructs the passage between Salt Island and these rocks and then continues SE. A small-boat passage is about 0.3 mile off the shore of Atka Island. It has a least depth of 6 fathoms, and scattered kelp over most of the passage. Foul ground extends 300 yards offshore, and heavy kelp may be encountered 0.5 mile off the Atka shore.

(806) A 2-fathom shoal is 1.3 miles S of Salt Island and 1.4 miles W by N from the nearby prominent point of Atka Island.

(807) Several reefs extend offshore from the N side of Salt Island, up to a distance of 0.3 mile.

(808) Anchorage in 22 to 24 fathoms, sand bottom, is available S of Salt Island, affording protection from N and E weather. Anchor with the trend of the E shore of Salt Island in range and bearing 020°, and the 38-foot pinnacle in the group of rocks off Salt Island bearing 090°. Small vessels may anchor close inshore. Considerable shelter is afforded by the reef and kelp patch that extend out from Salt Island.

(809) In W weather suitable anchorage is available in 20 fathoms, sand bottom, about 0.5 mile off the E shore of Salt Island, with the 38-foot pinnacle bearing 200°.

(810) Anchorage for large vessels is available in the bight of Atka Island to the S and SW of Salt Island, in 20 to 25 fathoms, hard bottom, with protection from E to SW weather. The approaches to the shores and anchorage are free of dangers except for scattered off-lying rocks which are well within the 20-fathom curve.

(811) **Deep Bay,** about 3 miles S of Salt Island, is about 2 miles long and averages 0.3 mile wide, making into Atka Island shore in a SE direction. General depths range from 20 to 26 fathoms. From the NW a long flat ridge can be seen at the S side of the entrance to the bay. The shores are bold but clear of dangers, except for several rocks at the middle of the entrance, and adjacent foul ground and rocks 100 to 200 yards off the entrance points. The most prominent rock in the middle of the entrance is 6 feet high. Anchorage in this bay is not suitable for large craft because of insufficient swinging room. Medium-sized craft may anchor in 20 fathoms about 0.5 mile inside the entrance, or in suitable depths at the head of the bay. Bottom in the bay is hard. About 0.5 mile inside the entrance to the bay, a small inner bay makes into the S shore. This small bay is about 0.3 mile long, and depths range from 2 to 5 fathoms. It is suitable for small craft. To enter Deep Bay, pass 200 to 300 yards W to SW of the 6-foot rock in the middle of the entrance.

(812) **Island Point,** 4 miles SW of Salt Island, is an irregular-topped, grassy headland 515 feet high. Because of the low valley between the headland and the main shore, this point may appear as an island to ships approaching from the W. Rocks and reefs fringe Island Point from 200 to 500 yards offshore. A conspicuous rock 22 feet high is 0.2 mile NE of the point.

(813) The bight in the shoreline between Island Point and Kovurof Point is about 1.5 miles to its head. Three inner bays open into this bight.

(814) **Bluefox Bay** is the open bight that extends for several miles W of Island Point. Two arms extend to the E and the S. A conspicuous, rugged hill 1,495 feet high is west of these arms. The shoreline of Bluefox Bay, especially in the arms, is irregular and broken, with many inshore reefs and pinnacles.

(815) The E arm is open and easy to approach. It offers some protection from E weather. Anchorage is in 16 to 20 fathoms, the bottom irregular and rocky, and offering poor holding ground.

(816) A rock awash is at the entrance to the S arm, 0.2 mile W of the E shore. This S arm has a hard bottom and is an indifferent anchorage for shallow-draft craft. A 3½-fathom shoal is in the middle of the entrance to the bay, S of the rock awash. The W shore should be favored in entering the arm.

(817) A small unnamed bay about 2.5 miles W of Bluefox Bay is behind a chain of rocky islets making out from the shore in a NE direction. The larger and closer inshore islets are flat topped and grass covered; the outer islets are bare, black rock and of lesser height, the outermost being 20 feet high. A number of kelp patches on 3- to 5-fathom shoals are from 0.1 to 0.5 mile offshore NW of these rocks. The offshore point of these rocks should be given a berth of at least 0.8 mile.

(818) The shoreline between the chain of rock islets and Wall Bay has two indentations or inlets. At the head of these, as well as at the heads of the two first-mentioned arms, are small beaches where pulling boats can land.

(819) The bottom in the area between Bluefox Bay and Wall Bay is irregular and spotted with rocky patches.

(820) **Wall Bay** is on the E side of Kovurof Point. It is a small bay that may be used as an anchorage by medium-draft vessels. This bay is about 1.5 miles long in the N and S direction and about 0.3 mile wide. High hills and bluffs border the W side of the bay, and moderate hills are on the E side. A valley leads off to the S from the head of the bay. In S weather strong winds sweep out from this valley into the bay, making the bay an indifferent anchorage. The point on the E side of the bay appears as a long, broken, sloping ridge terminating in detached rock reefs at the waterline.

(821) A 9-fathom shoal is on the E side of the entrance to the bay, about 0.6 mile E of the Kovurof Point shoreline and about 0.3 mile N of the rocks on the E side of the bay entrance.

(822) A small dome-shaped, rocky islet 14 feet high is 0.1 mile off the W shore of the bay about 1 mile S of Kovurof Point. A 3-fathom shoal is 270 yards 115° from the rocky islet; a 2½-fathom shoal is 550 yards 175° from the islet.

(823) A reef that uncovers 1 foot is in the lower part of the bay 0.1 mile off the E shoreline and 0.5 mile SE from the islet. A covered reef, marked by kelp, extends 200 yards NW from the 1-foot reef. Because of these various shoals it is not advisable for vessels to proceed S of the islet.

(824) Approach Wall Bay on a heading of **180°,** passing the Kovurof Point shoreline at a distance of 0.3 mile. When the rocks on the E side of the entrance are 1 point forward of the port beam, anchor in 17 fathoms, gray sand bottom.

(825) Small boats can land on the sand beaches at the head of the bay.

(826) **Chart 16486.–Kovurof Point** is the most prominent point W of Salt Island along the N shore of Atka Island. It is a double point, both parts of which slope gradually to a common peak 1,320 feet high. This peak is quite prominent on the few days out of the summer when it can be seen. The E point is the more prominent of the two and makes out farther to the N. It is distinguished by four flat-topped pinnacles directly off the point. Two of these pinnacles blend in together from certain directions and only three can be seen. The pinnacles identify this point.

(827) Between Kovurof and Bechevin Points is a bight 1 mile in depth. Two small inner bays open into this bight, Kovurof Bay and Podsopochni Bay. They are separated by a peak 1,225 feet high, which stands alone. The summit is a sloping ridge as seen from offshore; a sharp peak as seen from the E and W.

(828) **Kovurof Bay** is suitable as a small-boat refuge. There are numerous islands and rocky islets at its entrance. The passage W of these islands into the head of the bay is free of all dangers, except close alongshore. Anchorage for small craft is available in 4 to 10 fathoms, sand bottom.

(829) **Podsopochni Bay,** between Bechevin Point and **Podsopochni Point,** has a general depth greater than 10 fathoms and may be used as an emergency anchorage for small- and medium-sized craft in any but N weather. The bay is free of dangers to within 0.3 mile of the shore. Enter the bay midway between the small, grass-covered island, 40 feet high, off Podsopochni Point, and the kelp-marked 6-fathom shoal 0.7 mile NE of Bechevin Point.

(830) **Bechevin Point,** 5 miles SW of Kovurof Point, is also a double point, with a small bight in the shoreline between. The bluffs at the ends of these points rise to about 250 feet and are brown in color, streaked with gulleys and studded with pinnacles. The E part of the point rises abruptly to a sharp peak of 710 feet; the W part rises to a head of 615 feet, and then drops to a saddle before rising to the 1,000-foot-ridge behind.

(831) N of the W part of Bechevin Point at a distance of 0.7 mile is a rocky 14-foot islet that is the most conspicuous and dangerous menace to navigation in this locality. Matted kelp and submerged reefs make out from the point and surround this rocky islet for some distance. Passage between the islet and the point should not be attempted, except by small craft; a low, flat reef which uncovers 2 feet is 400 yards off the point.

(832) The deep bight between Bechevin Point and White Point contains two small inside bays. The bay to the E, **Portage Lagoon,** is marked by numerous bare, black, rocky islets at its entrance, and by a high, steep-sloped peak directly W of the entrance. This lagoon which extends from Bechevin Bay across Atka Island almost to the Pacific side of the island, when seen from the NW, appears as a low pass through Atka Island. Small boats can enter Portage Lagoon as heavy seas do not enter this lagoon because of the string of reefs and islets across the entrance that act as a breakwater. Passages between these reefs are narrow and dangerous, especially in heavy weather, and should not be attempted by strangers. One passage is between the southwesternmost reef and the W shoreline. Several kelp-covered reefs are in this passage. A second passage is E of the grass-topped islets and about midway in the line of reefs. This passage is about 50 yards wide and has covered rocks on both sides.

(833) **Bechevin Bay,** when approached from the N, is identified by the aforementioned low pass or valley cutting through the mountainous coast of Atka Island to the Pacific. The rocky islet 0.7 mile off Bechevin Point helps to identify the bay. The SW side of the entrance to the bay is marked by a rugged hill with deeply eroded scars and slides. The base of the hill is fringed with whitish-gray rock along the shore. Farther in, a low, grassy headland is rounded when entering the inner part of the bay.

(834) Bechevin Bay is about 4 miles long and 1 mile wide. It is fairly open and exposed. Strong, gusty winds drawing through the mountain passes are common. Large ships anchoring in the outer bay will find less wind in the lee of the prominent 1,510-foot hill just SW of Portage Lagoon. The survey ship frequently anchored 0.5 mile off the shore under this hill in 20 fathoms, with the N tangent of the hill bearing 090° and the low, grassy headland on the N side of the entrance to the inner bay bearing 250°. The bottom is even and consists of coarse, dark sand with broken shell.

(835) The inner bay offers good anchorage to shallow-draft craft. The N side is shoal and has a boulder bottom; it should be avoided. A broad, sandy beach stretches across the head of this bay. Anchorage in 3 to 5 fathoms with sandy bottom is found off this beach, which is a good landing place for small boats.

(836) Medium-draft vessels will find anchorage in 11 fathoms at the entrance to the inner bay midway between the S shore and the low, grassy headland on the N side. This grassy headland and the whitish, gray cape beyond should be on range. The bottom is sand and is fair holding ground.

(837) The peninsula to the N and W of Bechevin Bay consists of two rounding points, White Point and Stripe Point. Between the E and W points is a low valley where there is a lake, the overflow of which empties into the Bering Sea at a waterfall. This waterfall can be distinguished well offshore. To the E, **White Point,** which is the W shore in approaching Bechevin Bay, is identified by light-colored gray bluffs. **Stripe Point** consists of two ridges that rise gradually to a common peak. Conspicuous gray-colored rock slides mark this point with a striped effect that identifies it. Between the two heads at Stripe Point, is a light-colored boulder beach.

(838) **Crescent Bay,** SW from Stripe Point, is a bight in the shoreline of 1 mile depth. The head of this bight shows a low pass across the island. The shores are rocky except at the W end of the head of the bight which is sand and gravel. Two inner bays are suitable for small craft. One, at the E end of the head of the bay, is 0.5 mile long and 0.2 mile wide with anchorage in 3 fathoms and is open to the W. The other is a small lagoon, at the middle of the head of the bay, suitable only for the smallest launches.

(839) **Slope Point,** the W side of Crescent Bay, is a grassy sloping ridge, rising gradually to a hill 865 feet high. Several rocky islets 1 to 5 feet high extend from the end of this point.

(840) **Kigun Bay,** the bight between Slope Point and Cape Kigun, is backed by low hills appearing as a low pass through the island. Depths of 10 to 15 fathoms are in the outer part of the bay, decreasing to about 3 fathoms within 0.2 mile of the shore. The head of the bay is light-colored sand which is evident from seaward. In the E half of the bight, a low point of scattered, rocky islets makes out from the shore; the point is surrounded by kelp. Foul ground is near the shore around most of the bay.

(841) **Cape Kigun,** the W extremity of Atka Island, is a bold point of brownish cliff with close, alongshore reefs. The ridges making up from the several small points converge on a round-topped peak, about 1,130 feet high, that is prominent in clear weather. It is a single peak 0.6 mile E from the extreme W end of the island.

(842) **Koniuji Island,** 14 miles NE from Cape Kigun, is volcanic, and all sides, except the S and SE, are sheer and precipitous, rising to two sharp summits of 896 feet and 790 feet. The S side of the island, above lower bluffs at the shore, slopes gradually to a ridge about 0.2 mile N and drops off again into a ravine that passes through the island at some elevation. The slope up from the S side is grass covered. The NW end of the island is a low, flat, rocky point about 200 yards long. About 75 yards off the N shore is a detached rock, 8 feet high, that is distinguishable from certain directions. An extensive kelp patch makes out to the S of the island. Also, in the summer, heavy kelp is found along and well off the W shore. The island is clear of dangers at a distance of 0.5 mile from the shoreline.

(843) This island is the nesting place of thousands of sea fowl, that make their nests among the grass-covered, volcanic boulders that cover many parts of the island.

(844) **Local magnetic disturbance.**–Differences of as much as 10° from the normal variation have been observed on Koniuji Island and as much as 7° at a distance of 2 miles in all directions around the island.

(845) **Kasatochi Island,** 10 miles NW from Cape Kigun, is an extinct volcanic crater rising to 1,038 feet. The S and SE sides are grassy slopes; the W and SW sides are high, rocky bluffs. There is a small islet adjacent to the SW side. As seen from the S and SW, the sides are gradual slopes, and the summit (rim of the crater) shown as a ridge with several nobs of varying heights. The N side, as seen from the E and W, appears abrupt and sheer, with the N part of the crater rim showing as a sharp nob. As one proceeds to the N or S of the island, these nobs, being parts of the crater rim, change to ridges.

(846) The island can be approached by deep-draft vessels to within 1 mile. An exposed anchorage is available in an emergency on the S side in 15 to 20 fathoms, hard bottom. A trapper's cabin is on the slope on this side.

(847) The N half of Kasatochi Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the rookery which encompasses the whole island. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(848) **Chart 16484.–Oglodak Island** is about 4.5 miles SW of Cape Kigun, the W extremity of Atka Island. It is about 1.3 miles long and 0.7 mile wide and is steep and mountainous. The shores are precipitous and rocky, and fringed with off-lying islets and rocks.

(849) **Atka Pass,** 4 miles wide between Atka Island and Oglodak Island, has depths of 10 fathoms or more to within 0.5 mile of each shore. A shoal with a least depth of 2 fathoms is 0.5 mile N of Oglodak Island; broken ground with depths of 7 to 9 fathoms extends 0.8 mile SE of the island. There are heavy tide rips and strong currents in the pass. Atka Pass is one of the best passages in the Andreanof Islands between the Bering Sea and the Pacific.

(850) **Ikiginak Island,** 1 mile W of Oglodak Island, consists of an almost cone-shaped mountain, 872 feet high. The island is 700 yards in diameter with detached islets at the E and W ends. The shores are steep, rocky, and fringed in places by off-lying rocks.

(851) The pass between Oglodak Island and Ikiginak Island has rocks that extend from both shores; it is not recommended without local knowledge.

(852) **Fenimore Rock** is 1.7 miles W of Ikiginak Island and 1.6 miles NE of the easternmost of the rocky islets that extend E of Tagalak Island. The rock is about 300 yards long and 220 feet high. There are several off-lying rocks covered 2 to 4 fathoms.

(853) **Fenimore Pass,** W of Fenimore Rock, has depths of 13 to 27 fathoms. Tide rips are found in several parts of the pass, and currents in excess of 4 knots have been observed.

(854) **Tagalak Island,** about 6 miles W of Ikiginak Island, is mountainous, roughly triangular in shape, and about 3.2 miles long and 2.5 miles wide. From the E point of Tagalak Island, a chain of small rocky islets, fringed by foul ground, extends to the E about 2.7 miles. The highest peak on Tagalak Island is 1,761 feet. The shores in general are steep and rocky with a few small beaches. The shoreline in most places is fringed by detached rocks.

(855) On the N side of the island chain is a bight that affords temporary anchorage in good weather with fair protection from the S and W in 10 to 15 fathoms, sand bottom; holding ground is fair. Currents are quite strong.

(856) **Tagalak Pass,** 1 mile wide in its narrowest part between Tagalak Island and Chugul Island, has depths of 5 fathoms or more to within 0.3 mile of the shores. The pass has the strongest tide rips and overfalls encountered in the Andreanof area. The pass is not highly recommended, but if used, midpass courses should be followed.

(857) **Chart 16478.–Chugul Island** is 4.5 miles long from NW to SE and 2.5 miles wide from N to S. The highest summit reaches 1,668 feet. There are several small lakes and streams on the island. The coast is generally steep and rocky, but there are indentations with sandy beaches at the heads. **Cape Kagalus** marks the SE extremity of the island.

(858) **Igitkin Island,** about 1 mile NW of Chugul Island, is 5.5 miles long and quite narrow. It is divided into two parts, connected by a low isthmus about 0.3 mile wide. Aside from this isthmus, the island is mountainous and rocky. N of this isthmus is a small cove, Igitkin Bight, and to the S is a somewhat larger indentation, Shelter Cove. The coast of Igitkin Island is in general steep and rocky and fringed with islets and detached rocks.

(859) **Igitkin Bank,** with depths of 1 to 10 fathoms, extends 2 miles W of **Igitkin Point,** the W extremity of the island.

(860) **Shelter Cove** is a small cove opening on Igitkin Pass. It is not recommended as an anchorage due to its size, rock bottom, and its exposure to draw winds from N and S.

(861) **Igitkin Bight** probably affords partly sheltered anchorage for small vessels; it is presumably subject to the same draw winds that prevail at Shelter Cove. It is about 0.8 mile long and has an entrance about 0.3 mile wide with black sand bottom. Depths inside range from 6 to 2 fathoms, but there are rocks and foul ground varying distances offshore. The bight is open to the N.

(862) **Igitkin Pass,** separating Chugul and Igitkin Islands, is clear and deep and perhaps the best pass from the N and E to Kuluk Bay. It is 3.5 miles long and the navigable channel is about 0.5 mile wide at the narrowest point at the W end. A midchannel course of **248°** leads directly into the pass N of Umak Island through which entrance into Kuluk Bay can easily be made. Tide rips have been reported between **Kingfisher Point,** on Igitkin Island, and the NW point of Tagalak Island, between Kingfisher Point and the E end of Chugul Island, and at the W end of Igitkin Pass. When the current is setting W through Igitkin Pass there is a strong S set near the W end of the pass.

(863) **Chugul Pass** (see also chart 16460), between Chugul Island on the E and Anagaksik and Umak Islands on the W, is about 4 miles wide, and is deep and clear.

(864) Next to Atka Pass, Chugul Pass, in combination with Asuksak Pass, is considered the best passage from the Bering Sea to the Pacific between Seguam Pass and Adak Strait. It is the best passage to Kuluk Bay from the SE. Prominent landmarks that can be used during the approach from S and E are the island of Anagaksik; Cape Azamis, the SE tip of Little Tanaga; the prominent, two-fingered pinnacle near the SE end of Chugul; and the conical-shaped island of Ikiginak. From a position 3 miles E of Anagaksik, a course made good of **303°** will pass Cape Ruin, the NE tip of Umak, at a distance of 1 mile. From this point, making good a course of **263°** will lead down the middle of Asuksak Pass, passing 1.5 miles off Cape Chakik, the W tip of Umak. Throughout Chugul Pass are strong tidal currents. In thick weather, dead reckoning is difficult because of these currents. (See the Tidal Current Tables for predictions for Chugul Pass.)

(865) **Chart 16471.–Great Sitkin Island,** about 24 miles W of Atka Island, is about 10 miles long and 8 miles wide. It is volcanic and extremely mountainous, the highest summit, an active volcano, is 5,710 feet. Much of the shore is steep and rocky, but with considerable stretches of sandy beach. It has some off-lying rocks both exposed and covered. Two large indentations are Sand Bay, on the SW side, and Yoke Bay, on the SE side.

(866) **Teapot Rock** is a large teapot-shaped rock about 150 yards off the NE extremity of Great Sitkin Island.

(867) **Chart 16478.–Ulak Island** is about 2.3 miles E of Bugle Point, the E extremity of Great Sitkin Island, and about 2.5 miles N of Igitkin Island. It is a barren rock, about 0.9 mile long, 0.2 mile wide, and 675 feet high. Deep water is close to the island on all sides, except the SW point where rocks extend out 300 yards.

(868) Yoke Bay, on the SE coast of Great Sitkin Island, has three arms. The best anchorage of the three is the middle or **West Arm;** it is about 1,500 yards in extent and affords anchorage in about 20 fathoms. The bottom is sticky hard mud, affording good holding ground. Limited anchorage space is available in both **North Arm** and **South Arm.** The bay is subject to williwaws, but their effect is not serious on ships equipped with good ground tackle. Yoke Bay is open to swells from the Pacific Ocean from the SW, although they are somewhat broken in their approach by nearby islands; it is entirely open in a NE direction to the Bering Sea.

(869) **Great Sitkin Pass** is between the S peninsula of Great Sitkin Island and the islands of Igitkin, Tagadak, Kanu, and Tanaklak. The pass has depths of 7 fathoms or more. Between **Zaliva Point** and **Passage Point** currents of 2.5 knots have been observed and greater velocities are to be expected. **Yoke Pass** is at the N entrance to Great Sitkin Pass, between Igitkin Bank and Rip Point. Because of tide rips, currents, and the frequent changes of course required, Great Sitkin Pass is not recommended, but if used, clear Rip Point by 0.6 mile and Igitkin Point by 1.2 miles to avoid the covered rocks that extend from the points; thence change course to pass 0.2 mile N of Box Island, thence a midchannel course between Tanaklak Island and Great Sitkin Island.

(870) **Tagadak Island,** about 2 miles SW of Igitkin Island, is small and roughly triangular in shape. The island is very rugged; the shores are steep and rocky except part of the W side which has a sandy beach. The coast in most places is fringed with reefs or shoals. It has been reported that Tagadak Island is used as a breeding ground by geese and ducks.

(871) **Kanu Island,** 1,055 feet high, is about 0.5 mile SW of Tagadak Island. The island is rocky and mountainous and about 1.5 miles long and 1 mile wide. The shores in general are steep and rocky, except on the W side where there is a sand or gravel landing beach about 0.5 mile long protected by other islands from all except SW winds. The coasts are mostly fringed with reefs and exposed and covered rocks. A relatively shoal area extends to the N for nearly 0.7 mile. Near the N end of this area is **Box Island,** a small rocky islet about 40 feet high. A small cove on the E side of Kanu Island might afford some shelter for small craft.

(872) **Tanaklak Island,** about 1.5 miles W of Kanu Island, is about 1.8 miles long and 0.5 mile wide and is rocky and rugged. The island is one of low relief and rolling hills.

(873) The channels between Tanaklak Island and Kanu Island and between Tanaklak Island and Asuksak Island are deep and clear.

(874) **Asuksak Island,** 0.5 mile S of Tanaklak Island, is steep and rocky and consists mainly of one mountain 955 feet high. The island is about 0.7 mile long and about 0.5 mile wide. On the NE end of the island is a low point with a gravel beach on each side.

(875) **Aziak Island,** 765 feet high, 0.5 mile W of Tanaklak Island, is about 1 mile long and 0.6 mile wide and is rocky and hilly.

(876) **Sand Bay,** on the SW coast of Great Sitkin Island, provides suitable anchorage in 12 to 15 fathoms about 1,000 yards offshore. The bay is protected on the N and E but is subject to heavy seas during a W gale. Strong tidal currents run in the bay.

(877) In 1964, the outer section of the long pier in **Northeast Cove,** Sand Bay, was reported uprooted and washed ashore; the inshore section was in poor condition.

(878) **Chart 16477.–Anagaksik Island** is about 2 miles E of the E end of Umak Island and on the S side of the entrance to Chugul Pass. The islet is a precipitous rock about 1 mile long, 0.5 mile wide, and 890 feet high. It has a few off-lying rocks, but in most places deep water extends close to the shore.

(879) **Umak Island,** about 5 miles SW of Chugul Island, is a mountainous, irregularly shaped island about 6 miles long and 3 miles wide with a deep bight indenting the NE coast. From this bight a low pass extends to the opposite side of the island. The shores are in general steep and rocky with occasional stretches of sandy beach. The N coast is foul, with many detached rocks, exposed and submerged. A number of islets are off the E coast. The S coast is in general clear, with few off-lying rocks, except toward **Cape Chakik,** the W extremity, where there are stretches of fringing reefs. Birds of many species frequent the island, there are also seals on the island.

(880) **Umak Bight** is about 2 miles in extent and its principal arm is about 0.6 mile wide at its entrance. The bight is open on the E to Chugul Pass, and considerable swell from the ocean may be expected in heavy E weather. In all other weather the bight is one of the better anchorages in this area, with depths of 26 fathoms and excellent holding ground of green mud near the head of the bight. Stray winds sweep over the bight from the low pass to the W of Umak Bight. A sand beach is at the head of the bight.

(881) **Asuksak Pass,** separating Umak Island from Kanu and Asuksak Islands, is 1.3 miles wide at its narrowest point and is

deep and clear, but the currents are strong between Kanu and Umak Islands. It is inadvisable to attempt the pass in thick weather.

(882) **Umak Pass,** between Umak Island and Little Tanaga Island is 0.6 mile wide at its narrowest point and 7 miles long with depths of 7½ to over 50 fathoms. Currents of 3 knots have been observed in the pass and greater velocities probably occur. The changes of current are accompanied by erratic movements and tide rips. (See the Tidal Current Tables for predictions for Umak Pass.) A rock awash is 0.5 mile SE of Cape Chakik and 500 yards offshore. In clear weather a midpass course can be taken through the pass. In thick weather the N side should be favored, entering the pass from E, until W of the narrows, then it is best to favor the S side.

(883) **Little Tanaga Island** is about 8 miles long and has a greatest width of about 7 miles. The island is extremely irregular in form. Two long bays, separated by a narrow isthmus, nearly cut it into two parts. The island is very rocky and mountainous; the highest peak is 1,747 feet. The shores in general are steep and rocky, and the coast generally is fringed with reefs, islets, and detached rocks. Several streams and small lakes are on the island.

(884) **Scripps Bay,** on the N coast of Little Tanaga Island, is a well-protected anchorage though subject to williwaws. The bottom is coarse sand with pebbles, but appears to hold fairly well. A sandy beach, intersected by a stream is at the head of the bay. Scripps Bay is subject to fog and reduced visibility; it is frequently thick here when the W and N sections of Kuluk Bay (Adak Island) are clear. In entering the bay, pass 400 yards off the rocky islet 0.3 mile inside the E shore to avoid the 2¼-fathom spot off the W point at the entrance. Anchor in 18 fathoms 750 yards SW of the islet. Small vessels can anchor in shallow water near the shore.

(885) **Chisak Bay,** on the S coast of Little Tanaga Island, is about 2.5 miles long and 0.8 mile wide. Depths are suitable for anchorage, but only small vessels may find swinging room which is reduced by numerous small islands. A 3-fathom depth is 0.4 mile SE and a 2¾-fathom shoal is 0.2 mile E of Chisak Island. The upper end of the bay is clear, but the channel, close W of Chisak Island, leading to it is very narrow. The bay is almost landlocked, but is reported to be exposed to swells and seas from the Pacific Ocean. A stream enters at the head of the cove. The shores of Chisak Bay consist of narrow rocky beaches.

(886) **Azamis Cove,** on the S coast of Little Tanaga Island, is about 2 miles long and 1 mile wide at the entrance. Depths are suitable for anchorage, but it is not recommended. The bay provides shelter from the N and W but is open to seas and swells from the Pacific Ocean.

(887) **Round Cove,** E of Azamis Cove, is about 1 mile in diameter, open to the S and SW, and moderately subject to heavy seas and ground swells. The depths are not too great; therefore anchorage is not recommended.

(888) **Chart 16475.–Little Tanaga Strait,** between Little Tanaga and Kagalaska Islands, is about 7 miles long and at its narrowest point about 1.2 miles wide; however, the navigable channel between Little Tanaga and Silak Islands has a width at one point of less than 0.5 mile. Tidal currents attain a maximum velocity of 5 knots through the pass E of Silak Island, producing swirls and heavy tide rips N and S of the island. The heaviest rips observed were in the middle of the pass about 1 mile N of Silak Island.

(889) The waters W of Silak Island are foul except for a passage about 0.2 mile wide along the shore of Kagalaska Island, which is recommended only for small boats. Large vessels must pass E of Silak Island. **Rip Rock,** at the SE end of the strait, covered 1½ fathoms, is marked by breakers in moderate swells.

(890) To pass through the strait from a position 2.8 miles 270° from Cape Chisak, make good a course of **000°,** keeping Silak Island a little on the port bow and heading for Tana Point on Little Tanaga Island. Hold the N course until abeam of Silak Island, then change to **330°** and pass through the channel. When abeam of Cemetery Point, a course of **000°** may be shaped to pass clear of the strait.

(891) **Piper Cove,** on the W side of Little Tanaga Island, about 1.8 miles N of Cape Chisak, is open to the W and SW, but affords temporary anchorage for small vessels.

(892) **Tana Bight,** an indentation on the W coast of Little Tanaga Island about 1 mile N of Tana Point, affords temporary anchorage for medium-sized vessels and fair shelter in S weather. The bottom is rocky and irregular. Currents in the bight are slight and usually flow in a direction opposite to that of the mainstream current through the strait.

(893) **Kagalaska Island,** 8 miles long and 5 miles wide, is extremely rugged and mountainous; the highest peak, 2,331 feet, is in the NW part. The shores are, in general, steep and rocky except on the W coast, where they have a more gradual slope, becoming steeper inland. The S shore consists of jagged cliffs. The E and N coasts are also steep in many places. The brief stretches of sand or gravel beach are often backed by vertical cliffs. The coasts are generally clear except the S and SE coasts and part of the N coast, which are fringed by islets and detached rocks. Several lakes and streams are on the island.

(894) **Cabin Cove,** opening into Little Tanaga Strait, is a two-armed bay which indents the E coast of Kagalaska Island for 2.5 miles. **Upper Arm,** 1.5 miles long and 0.5 miles wide, is bordered by steep, sloping hills on all sides; it is free of dangers. Approaching the entrance, the 10-fathom curve makes out from the N shore 200 yards, and 100 yards off the low gravel point on the N shore at the entrance. Anchorage can be had in 30 to 40 fathoms in the upper part of the arm. The shores are free of off-lying rocks and shoals. **Lower Arm,** 1 mile long with an entrance width of 800 yards, is smaller than Upper Arm, but most of it is suitable for anchorage. The surrounding terrain, especially at the head, rises in gentler slopes than in Upper Arm, but the summits are over 1,000 feet high. A stream flows into the head of the arm.

(895) **Crater Cove,** on the E shore of Kagalaska Island and 1.7 miles N of Ragged Point, affords temporary anchorage in 30 fathoms, sand and gravel bottom. High bluffs and hills on the nearby shore provide good shelter from N and W winds.

(896) **Quail Bay,** on the S coast of Kagalaska Island, is fringed by steep cliffs to E and W with many rocks along the beach. The bay is deep and clear of dangers to a point about 1.2 miles NW of Ragged Point. Temporary anchorage for small vessels may be had in 20 fathoms, sand bottom.

(897) **Kagalaska Strait** separates Adak and Kagalaska Islands. Although narrow, it can be navigated by moderate-sized vessels without difficulty at or near slack water. An 8¾-fathom shoal is in midchannel 1.6 miles inside the S entrance. S winds with ebb currents cause heavy tide rips from the S entrance N as far as Adak Bight, and are apt to cause a vessel approaching from the S to yaw badly. Because of strong currents, rips and whirlpools are encountered in the narrow parts of the strait except at slack water.

(898) Both N and S entrances are clear, with deep water close to the shores. Care must be taken not to mistake Blind Cove for the N entrance since the former is about 1 mile W of the strait, and has a much wider appearance. The shores of the N entrance are bold and precipitous while those of the S entrance are relatively low, with outlying rocks. Navigators not familiar with the area are cautioned against attempting an entrance in any but clear weather.

(899) **Local magnetic disturbance.**–Differences of as much as 11° from normal variation have been observed in Kagalaska Strait near the N entrance.

(900) **Ragged Point,** the SE extremity of Kagalaska Island, is 4.5 miles E of Kagalaska Strait and is an unmistakable landmark for the S approaches to the strait because of its serrated ridge forming the summit of the point. A natural arch in the tip of Ragged Point is noticeable when the point bears 017°.

(901) **Adak Bight,** about 2 miles from the S entrance to Kagalaska Strait, affords good shelter for vessels up to about 100 feet in length. A 3-fathom shoal, marked with kelp, is 0.3 mile SE from the N point of the bight. Vessels approaching from the N should clear this shoal 0.3 mile before turning to enter. Either arm of the bight is suitable for anchoring, but the northernmost affords more swinging room. A shoal is just off the point between the two arms. In entering either arm, a vessel should keep in midchannel.

(902) **Campers Cove,** just N of Adak Bight, is suitable only for small boats because of the narrow, shallow entrance. Relatively small vessels can anchor in about 10 fathoms in the indentation just N of **Campers Point** and thus avoid currents and rips in the strait.

(903) **Laska Cove,** on the E side of Kagalaska Strait, is deep and well protected. Small vessels usually anchor in the NE portion of the cove.

(904) **Chart 16471.–Adak Island,** the most important of the Andreanof Group, is about 30 miles long and 20 miles wide at its widest part. The island is rugged and mountainous and has numerous small bays and indentations. **Mount Moffett,** 3,900 feet high, near the NW end, is the highest point of the island; it is snow covered the greater part of the year. The island is grass covered on the lower levels; the higher levels have a heavy growth of moss. Small lakes are numerous and there are many small streams.

(905) The Commanding Officer, Naval Air Station, Adak, Alaska, advises that **Sweeper Cove**is within the boundaries of a U.S. Naval Air Station, and only U.S. government vessels or specific contract vessels are permitted to enter. Emergency entrance for bonafide vessels in distress will be allowed.

(906) All fishing, commercial, and other vessels desiring to enter U.S. waters contiguous to Adak Island, N of 51°50'N., are required to provide a 24-hour or maximum reasonable advance notice of arrival. Such advance notice of arrival should be addressed to the Commanding Officer, Naval Air Station, Adak, Alaska, and include information concerning the vessel's name, homeport, owner, and the number of non-United States nationals aboard. Entry into Lake Andrew, Clam Lagoon, Kuluk Bay and Sweepers Cove is restricted. Adak is a closed military reservation and access will be granted only in actual emergency situations in which life is at risk.

(907) **Chart 16475.–Boot Bay** is on the S coast of Adak Island about 3 miles W of Kagalaska Strait. The inner harbor has depths of 11 to 35 fathoms over bottom varying from rock to mud; the mud bottom is in the deeper water. Seas and swells from the Pacific Ocean are broken up by the islands in the bay; however, the islands offer little protection from S winds. As the land to the N is mountainous there is a probability of williwaws with N winds.

(908) **Blind Cove,** indenting Adak Island just W of the N entrance to Kagalaska Strait, is suitable for temporary anchorage only; it is exposed to the N and is subject to williwaws from the S. A midchannel course is clear for small vessels to an anchorage in 16 fathoms in the S end of the cove. Caution is necessary to avoid the shoal spots covered 1½ to 6 fathoms off the entrance points.

(909) **Kuluk Bay,** on the NE side of Adak Island, is about 4 miles long and 4 miles wide, and is one of the best natural harbors in the Aleutians. It is entered between Zeto Point on the N and **Thunder Point** on the S, and includes Kuluk Bay proper, Clam Lagoon, Sweeper Cove, Finger Bay and Scabbard Bay. Tidal currents in the bay are weak and the flow appears to depend mainly upon the winds.

(910) **Zeto Point** is a prominent butte rising well above the surrounding land and has several jagged pinnacles along its S face. About 1.5 miles NE of the point is **Head Rock,** which is large and bare.

(911) **Kuluk Shoal,** consisting of several rocks covered 1¼ to 9 fathoms and marked by kelp, is about 0.8 mile S of Head Rock and 1 mile E of Zeto Point. A lighted bell buoy is about 0.6 mile E of the shoal.

(912) A 9-fathom shoal with rocky bottom is 0.5 mile 012° from the Head Rock (see chart 16471); a 17-fathom bank with rocky bottom is 2 miles 096° from the rock.

(913) **Clam Lagoon,** 0.5 mile NW of Zeto Point, can be entered only by small boats. A fixed bridge with an unknown clearance crosses the entrance. In the S part of the lagoon and outside the entrance are mudflats. The ruins of a long pier are 0.5 mile W of the lagoon entrance.

(914) A **naval restricted area** is in the NW part of Kuluk Bay beginning at Zeto Point. (See **334.1320,** chapter 2, for limits and regulations.)

(915) **Chart 16476.–Sweeper Cove,** on the SW side of Kuluk Bay, provides good shelter in 7 to 20 fathoms inside a breakwater, marked by a light on the outer end, that extends from the N side of the entrance; bottom is gray sand. A fuel tank at the W end of the cove is prominent.

(916) **Sweeper Cove Entrance Light 5** (51°51.5'N., 176°35.5'W.), 55 feet above the water on the NW side of Lucky Point, is shown from a steel structure with a square green daymark.

(917) **Gannet Rocks,** on the N side of the entrance to Sweeper Cove, are bare and surrounded by shoal water. A detached shoal, covered 3½ fathoms, and a group of small islets, surrounded by shoals, are between Gannet Rocks and the shore. **Gannet Rocks Light 4** (51°52.0'N., 176°36.5'W.), 45 feet above the water, is shown from a skeleton tower with a triangular red daymark on the S end of the largest rock. Two water tanks, red and blue are on the high ground at the head of Kuluk Bay about 1.2 miles NW of Gannet Rocks Light 4.

(918) **Pit Rock,** the southernmost of the two large rocks on the SE side of the entrance to Sweeper Cove, is bare and surrounded by foul ground. **Finger Shoal,** 0.4 mile E of Pit Rock, has a rock

that uncovers in the detached shoal area. A lighted bell buoy is about 300 yards NE of the shoal.

(919) The diurnal range is 3.7 feet in Sweeper Cove. (See the Tide Tables for daily predictions for Sweeper Cove.) During severe weather, a surge may be experienced inside the cove, making it difficult at times to remain alongside any of the piers. Heavy float fenders should be used, and vessels should be prepared to get underway.

(920) **Harbor regulations.**–Sweeper Cove is part of a U.S. naval air station. Permission to enter or move about the cove must be obtained from the Commanding Officer who can be contacted by calling ADAK CONTROL on 4125 kHz or VHF-FM channel 16. Vessels entering the Port of Adak will request channel clearance from and give an accurate estimated time of arrival to Adak Port Control on 4125 kHz or other designated frequency at least 2 hours prior to arrival. The Port Services Officer will assign a berth and provide advisory pilotage service and tug if needed. The pilot advisor will board from a tug in the vicinity of Gannet Rocks. Two 2,000-hp tugs and salvage equipment are available at port services.

(921) **Pilotage, Adak**.–Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(922) The Aleutian Islands are served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(923) Vessels using Southwest Alaska Pilots Association pilots and en route to Adak can meet the pilot boat about 2 miles E of Gannet Rocks Light 4 (51°52.0'N., 176°36.5'W.).

(924) The pilot boat can be contacted by calling "ADAK PILOT BOAT" on VHF-FM channel 16 (156.80 MHZ) or on a prearranged frequency between pilot and agent/vessel.

(925) **Wharves.**–Piers 3 and 5, on the N side of Sweeper Cove, are used by vessels drawing up to 30 feet. A short barge pier is E of Pier 3; 30 feet is reported alongside. Pier 10 is a T-head fuel pier at the extreme W end of Sweeper Cove with a least depth of 35 feet alongside. A black tank with a red light on top is inshore of Pier 10. Water and telephone connections are available at Piers 3 and 5.

(926) A small-boat basin is at the SW end of the cove. In 1978, most of the piers in the basin were reported to be in poor condition. In August 1983, it was reported that the entrance channel to the basin was marked by private buoys, had a depth of 4 feet, and kelp along the S side. In May 1984, a submerged obstruction was reported in the NW end of the basin in about 51°51'06"N., 176°39'14"W.

(927) **Hammerhead Cove,** on the S side of Sweeper Cove, has depths of 6 to 24 feet.

(928) **Finger Bay,** on the S side of Kuluk Bay, is about 1 mile long and 1 mile wide and has two narrow arms that extend in S and SW directions. Both arms are open to the NE but no sea penetrates their narrow entrances. In the outer part of the bay depths are generally too deep for suitable anchorage, although temporary anchorage may be found in about 30 fathoms 400 yards SW of Lucky Point and in 24 fathoms off the entrances to the two arms.

(929) The SW arm is narrow but clear in midchannel, with a least depth of 5 fathoms. Submerged pier ruins and pilings extend up to about 180 yards from the N shore between 51°50'04"N., 176°37'14"W and 51°49'53"N., 176°37'36"W. Holding ground near the head of the arm is good. Winds through Finger Bay tend to be very strong because of the high bluffs on each side. Wind direction is along the axis of the piers, and vessels should have little trouble holding alongside. Surge in Finger Bay is at a minimum.

(930) **Scabbard Bay,** just E of Finger Bay, is open to the N. Anchorage can be had near the entrance in 20 fathoms, gray sand and broken shell bottom. At the S end of the bay is good shelter in 15 to 20 fathoms, brown mud bottom. Water is obtainable. Midchannel courses will avoid all dangers.

(931) **Charts 16471, 16467.–Cape Adagdak,** the northernmost point of Adak Island, is a bold headland 2,072 feet high. From Cape Adagdak, the coast trends SW and then curves W to form 3-mile-wide Andrew Bay. A 20-foot-high rocky dike separates the head of the bay from freshwater Andrew Lake.

(932) **Acorn Rock** is 0.2 mile off the N coast of Adak Island, 5.5 miles SW of Cape Adagdak. A shoal covered 1 fathom is 0.4 mile offshore 0.6 mile W of the rock.

(933) **Cape Moffett,** 8 miles SW of Cape Adagdak, is a cliff 600 feet high behind which the land rises gradually to Mount Moffett. The cape is the NW headland of Adak Island and is prominent for entering Adak Strait. **Cape Kiguga,** 2 miles S of Cape Moffett, is the westernmost projection of Adak Island at the N entrance to Adak Strait; it is a very steep eroded slope rising abruptly from the water. The 30-fathom curve extends about 1 mile off Cape Moffett and Cape Kiguga; there are no off-lying dangers.

(934) **Adak Strait,** between Adak Island and Kanaga Island, is 16 miles long and from 6 to 8 miles wide; depths are from 30 to over 100 fathoms. The only dangers are the rocks and reefs off **Eddy Island** and **Argonne Point** on the E side and **Shoal Point** and **Naga Point** on the W side. Vessels should clear both shores of the strait by not less than 1 mile. Since the current velocity may reach 4 knots, passage in heavy fog without radar is not recommended. (See the Tidal Current Tables for predictions for Adak Strait.)

(935) The coast of Adak Island along the E side of Adak Strait is bordered by steep bluffs and rocky cliffs; islands, rocks, and reefs are close to shore. Eddy Island, at the N entrance, is prominent. **Whirlpool Rock,** 1 mile E of Eddy Island, is small, flat on top, and awash at extreme high tides; kelp grows close to it. Currents are strong and erratic in this area. **Wedge Point,** a rocky bluff 7.5 miles S of Eddy Island, is prominent. A good anchorage for small vessels in S weather is 0.8 mile E of Wedge Point, 0.3 mile offshore in 17 fathoms, sand bottom. The point 9.5 miles S of Eddy Island resembles the head of a huge gorilla.

(936) The coast of Kanaga Island along the W side of Adak Strait is fringed by kelp beds, islets, and rocks. There are several anchorages that provide protection from W weather. One is in the cove between **Round Head** and Shoal Point; another is midway between Shoal Point and Naga Point in 17 fathoms, gray sand bottom. A reef covered 6 fathoms is 1 mile NE of Naga Point and 0.8 mile offshore; another reef covered 13 fathoms is 0.7 mile E of the point. When the current is ebbing heavy tide rips occur on these reefs in S weather.

(937) **Cape Chlanak,** on the W side of the S entrance to Adak Strait, is low and rocky. Shallow water marked by kelp is close to the shoreline. Currents are strong and medium tide rips occur off the point.

(938) **Shagak Bay,** 3 miles SE of Cape Kiguga, has depths of 20 fathoms or more, but only 4 feet can be carried through the 400-yard-wide entrance between grass-covered sandspits. A

band of very heavy kelp extends across the entrance; the bar is relatively smooth rock. The bay is well protected from swells; the bottom is mud and probably fair holding ground. Violent williwaws and gales are encountered in E and SE weather. A good weather anchorage is indicated 1 mile NW of the entrance and 0.7 mile offshore in 17 fathoms, flat sand bottom.

(939) **Chart 16474.–Bay of Islands,** on the NW side of Adak Island, is protected by the many islands at the entrance; wire-drag depths of 34 feet or more are in the main passages. The bay is about 6 miles in a SE direction and varies in width from 3 miles at the entrance to less than 1 mile at the SE end. Although the bay is protected from sea swells, violent and severe gales occur, especially with winds from E and S.

(940) The approaches to Bay of Islands are clear to within 500 yards of **North Island** on the E and **Careful Point** on the W. Currents are strong near Careful Point. **Cascade Rock,** in about the middle of the entrance, is only 2 feet high and breaks in heavy weather; shoal water surrounds the rock.

(941) The preferred passage to **Expedition Harbor,** in the SE part of Bay of Islands, is W of **Green Island** through **The Race** between the W end of **Ringgold Island** and **Plum Island Rocks,** thence through **Ringgold Sound** and **Hell Gate.**

(942) The Race is dangerous because vessels must pass close to Plum Island Rocks. A speed of 8 to 10 knots is essential for a large single-screw vessel to make the necessary changes in course.

(943) Hell Gate narrows to about 70 yards and is dangerous for a large vessel in case of strong beam winds or mechanical failure.

(944) At the E end of Hell Gate, the kelp-covered rocks on the S side and **Eaglet Rocks** on the N narrow side of the channel, makes it particularly difficult for an outgoing vessel because it is necessary to head for Eaglet Rocks, and, when the rocks are close at hand, make a sharp turn in order to pass through the deep and narrow part of Hell Gate.

(945) Expedition Harbor can be reached through **Argonne Channel,** N of Ringgold Island, but this passage is dangerous because the reefs at the turn N of **Black Island** narrow the channel width to 90 yards.

(946) Vessels can anchor in the W or E parts of Expedition Harbor. The main part of the harbor, with depths of 30 to 85 fathoms, is too deep for anchorage. Anchorage areas: **Unalga Bight,** at the W end, in 16 to 25 fathoms, mud bottom; **Gannet Cove,** at the E end, in 16 to 25 fathoms, mud bottom; and **Beverly Cove,** N of Gannet Cove, in 10 to 18 fathoms.

(947) An excellent anchorage for small vessels is in **Fisherman Cove,** on the S side of Ringgold Sound, in 10 to 22 fathoms, mud bottom.

(948) Anchorage can also be had on the S side of North Island in 20 fathoms or more, mud and rock bottom. The area can be reached by passing W of North Island until past **North Rocks,** thence a **110°** course between shoal spots of 3¾ fathoms on the N and 4 fathoms on the S to the anchorage.

(949) Water can be obtained from several waterfalls in the Bay of Islands. The waterfall 0.3 mile SE of **Vincennes Point** has the most accessible natural water supply in the bay.

(950) **Charts 16471, 16467.–Three Arm Bay,** on the W side of Adak Island, has depths of 19 fathoms or more in the outer part, but the depths decrease to less than 5 fathoms in the arms. Most of the covered dangers are within 300 yards of the shore. In S weather small vessels can anchor 0.3 mile E of **Three Sisters Island** in 17 fathoms, sandy bottom. **North Arm,** 0.2 mile wide with steep sides, extends 2 miles inshore to a low draw. A short overland trail leads from the upper end of the arm to the S shore of Unalga Bight in the Bay of Islands. In SW and W weather, swells from Adak Strait enter North Arm; in E or W weather, winds draw through this arm. Anchorage is suitable only for small craft in good weather. A fair anchorage for small vessels is in **Middle Arm,** 0.5 mile N of **Split Point,** and rock bottom is poor holding ground. **South Arm** is well sheltered, but the holding ground was reported poor in 1973. It is entered from Middle Arm through a 6-fathom passage between the W shore of the small island off Split Point and the shoreline to the W. The passage is foul between Split Point and the island off the point.

(951) **Lake Point**, the southwesternmost point of Adak Island, is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the rookery which encompasses most of Cape Yakak. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(952) **Bay of Waterfalls,** on the S side of Adak Island just E of Adak Strait, is 8 miles long and 5 miles wide at the entrance but narrows to 0.5 mile at the N end. Depths of 10 fathoms or more are within 0.3 mile of the shore, except for a pinnacle rock, covered 1½ fathoms, 5.5 miles inside the bay at a point 0.5 mile W of **Low Point.** Most of the bay is too deep for anchorage; it is exposed to the seas and swells of the Pacific Ocean and to heavy gusts sweeping through the mountain passes of Adak Island. Vessels can anchor in 16 fathoms within 0.5 mile of the head.

(953) **Cape Yakak,** on the W side of the entrance to Bay of Waterfalls, is a long, flat tableland, well defined and easily recognized because it has no high peaks on it.

(954) **Chapel Roads,** the E arm of Bay of Waterfalls, offers anchorage in 20 fathoms, rocky bottom, but is also exposed. **Chapel Cove,** the inner bight of Chapel Roads, affords temporary anchorage in 10 fathoms, hard to soft gray sand bottom. The entrance is narrow, being restricted by **McCulloch Rock,** a pinnacle covered 2½ fathoms, on the N side of the cove. **Pulpit Rocks,** inside the cove, are a ledge of bare rocks.

(955) **Cataract Bight,** on the E side of Bay of Waterfalls near its head, affords anchorage in 24 fathoms 200 yards off the beach; water can be obtained. A perceptible swell reaches the bight with S winds.

(956) **Hidden Bay,** 12 miles NE of Cape Yakak, is a 0.1-mile-wide inlet 1.2 miles long with depths of 10 fathoms or more in midchannel; high hills are on both sides. Small boats will find good shelter in the W arm at the N end of the bay in 11 fathoms, mud bottom. A 6-foot-high rock, 0.6 mile S of the entrance, marks a foul ground area with deep channels on either side; boats should keep well clear of the E entrance point.

(957) **Chart 16460.–Kanaga Island,** across Adak Strait from Adak Island, is roughly right-angled and extends 18 miles N and S, 28 miles E and W, and has a maximum width of 7 miles. **Kanaga Volcano** (chart 16471), at the N end of the island, is cone shaped, rising directly from the water to 4,416 feet; steam may emit near the summit. In clear weather this excellent landmark is visible from all directions. There are several lesser peaks S of the volcano from which the land slopes down abruptly to rolling tundra-covered hills, 600 to 100 feet high, interspersed with numerous streams and lakes.

(958) The Bering Sea Aerological Unit stationed at Kanaga Bay found that the Kanaga Volcano could be utilized as a means for forecasting bad weather. The volcano peak is seldom absolutely clear of clouds. During April 1934, it was observed that invariably the day or night before a gale the peak made its appearance, shorn of all clouds and with wisps of steam around the crater. During the summer of 1953, the phenomenon was noted on several occasions, but it is not infallible, as evidenced at other times when bad weather did not follow clear visibility of the peak.

(959) **Chart 16471, 16467.**–Most of the N coast of Kanaga Island between **Cape Miga** and Round Head is fringed by kelp beds, islets, and rocks. Depths of 100 fathoms reach within 0.5 mile of shore from Cape Miga for 2 miles E, where the shoreline trends SE for 4 miles to Round Head, and depths of 30 fathoms reach within 1 mile of shore. The water over this relatively shoal area appears much disturbed and currents are strong and erratic.

(960) **False Bay** (51°43'N., 177°09'W.), 0.5 mile N of Cape Chlanak, has landing places protected from all but heavy SE swells on the sand beaches at the head of its two arms. The bay may be used as an emergency anchorage for very small vessels, in 8 fathoms, sand bottom, and affords protection from W and N winds.

(961) **Kanaga Bay,** on the S coast of Kanaga Island 2 miles W of Cape Chlanak, is 2 miles long and 0.4 mile wide with depths of 10 to 3 fathoms, except for the shallow N part which nearly dries in places. The hazardous entrance channel is only 130 yards wide between reefs plainly marked by kelp.

(962) The shoreline of Kanaga Bay consists of rocky cliffs or steep grassy bluffs, with a sand beach and low ground at the head. Good anchorage is afforded medium-sized vessels in shallow water, with excellent holding ground of sticky mud mixed with black sand. The anchorage is protected from all winds except SE, and the bay is apparently not subject to williwaws, the heaviest gusts coming from NE. With heavy swells from S through SE, the entrance is impassable, and it should never be attempted without good visibility.

(963) The wreck of the USS SWALLOW on the W side of the entrance to Kanaga Bay is prominent and appears red in color from offshore. If any appreciable swell is running, the sea breaks on both sides of the entrance channel near the wreck.

(964) In 1954, the outer part of the dock at the abandoned site, 1.4 miles above the entrance of Kanaga Bay, was in fair condition; small vessels could berth along its face where the depth is 13 feet. The dock has been gutted by fire near the beach end and buildings along the waterfront have been burned. A prominent radio mast on a hill 175 yards NE of the inner end of the dock is visible throughout the bay. A cabin is across the bay NW of the dock.

(965) **Chart 16460, 16467.**–The S coast of Kanaga Island is low, rocky, and very broken with numerous offshore rocks and reefs marked by kelp fringing the shore. The coast should be cleared by at least 2 miles to avoid the dangers.

(966) The waters off **Cape Tusik,** 3 miles W of Kanaga Bay, appear much disturbed with strong currents. A dangerous shoal extends SSW for 2 miles off the prominent headland 2 miles NW of Cape Tusik. Depths of 16 fathoms are on the outer part, decreasing to much shoaler depths closer inshore.

(967) **Chart 16463.–Sentry Rock,** 9 miles W of Cape Tusik and 1 mile off the S coast of Kanaga Island, is 94 feet high and prominent. Passage between the rock and the shore should not be attempted.

(968) **Cape Chunu,** the SW end of Kanaga Island, has grassy bluffs and rocky cliffs 100 to 200 feet high; rolling grassland is in the interior with hills up to 345 feet high. The shoreline is ragged and rocky; rocky reefs and prominent rock islets and pinnacles fringe the shore. **Castle Island,** a small grass-covered rocky islet off **West Chunu Point,** is 165 feet high and prominent from the SE and NW. Vessels are cautioned to pass at least 1.5 miles off Cape Chunu to avoid the shoal area of very irregular rocky bottom with depths of 2 to 6 fathoms. The waters for several miles S of the cape are usually much disturbed, indicating strong currents.

(969) **Kanaga Pass,** between Kanaga Island and Tanaga Island, is 3.8 miles wide at its narrowest part, but it is full of small rock islets, dangerous reefs, and strong currents; passage is not recommended except during periods of good visibility and calm seas.

(970) Foul ground extends into Kanaga Pass for over 1 mile from the W side of Cape Chunu to more than 3 miles off **Western Point,** Kanaga Island, thence over 1.5 miles offshore along the N coast of Kanaga Island. **Eddy Rock, Goose Rocks,** and **Annoy Rock,** a part of the foul ground, are prominent. A dangerous reef, covered 5 feet to 3 fathoms, is 0.4 mile N of Annoy Rock. The dangerous area from this reef E to Kanaga Island is rocky and very irregular; many underwater pinnacles exist. The kelp that marks the area during the summer is towed under by the current except at slack water and cannot be relied upon to indicate the shoals.

(971) **Cape Sasmik,** the S end of Tanaga Island on the W side of Kanaga Pass, is a relatively flat grassland with steep grassy bluffs and rock cliffs rising abruptly from the shoreline to 100 feet. Rocky islets and reefs border the coast close inshore. **Herd Rock** (chart 16462), a 20-foot detached black rock on the SW side of the cape, is conspicuous from the SE and NW. The cape should be cleared by at least 1 mile.

(972) Foul ground extends up to 1 mile off the Tanaga Island shore on the W side of Kanaga Pass, except in the approach to Twin Bays. The bottom is very broken and irregular, and the shoreline is made up of low cliffs.

(973) A good anchorage in W weather is 3 miles N of Cape Sasmik and 0.8 mile offshore in 18 fathoms, sand bottom; Twin Bay is also a good anchorage.

(974) **Trunk Point,** 11 miles NE of Cape Sasmik, shows as a low rounded knoll.

(975) **Cape Sudak,** the long finger-shaped easternmost point of Tanaga Island on the N side of the N entrance to Kanaga Pass, terminates in a small flat-topped, steep-sided 70-foot-high promontory that appears detached from offshore. A dangerous shoal, with bare rocks, extensive heavy kelp, and underwater pinnacles, extends 2 miles NE from the cape. The waters from the shoal to the 100-fathom curve appear greatly disturbed. The cape should be cleared by over 2 miles.

(976) Anchorage protected from W and N swells is 1 mile SE of the end of Cape Sudak in 20 fathoms, flat cinder bottom.

(977) The current velocity may reach 4 knots in the narrow part of Kanaga Pass. In calm weather, tide rips are visible among the covered reefs between Annoy Rock and Kanaga Island. With a heavy S swell and the current ebbing S, seas break across the en-

tire pass. (See the Tidal Current Tables for predictions for Kanaga Pass.)

(978) The recommended routes through Kanaga Pass with depths of 10 fathoms or more are through **Explorer Passage,** between Annoy Rock and **Hazard Point,** Tanaga Island, thence either midchannel between Kanaga Island and Tanaga Island, or the 0.3-mile-wide passage through **The Ditch** between dangerous **Eider Reef,** awash in places at half tide, and Trunk Point, Tanaga Island.

(979) **Twin Bays,** 5 miles N of Cape Sasmik, is a good small-boat anchorage in W and N weather; larger vessels may anchor just off the entrance. A 75-foot-high distinctive rock resembling a Christmas tree in profile outline, undercut by surf action to balance on a small pedestal, is on the beach at **Christmas Tree Point,** on the W side of the entrance. The shores on both sides of the entrance to the bay are 100-foot-high vertical cliffs with reefs that extend more than 0.1 mile into the bay; the surrounding country is rolling grassland. Foul ground extends 0.7 mile S of Christmas Tree Point.

(980) A boulder beach, with a very shallow valley beyond, is at the head of the NE arm of Twin Bays; a sand beach backed by a narrow, deep valley is at the head of the NW arm. A trapper's cabin is near the beach in the NW arm, and a stream empties into this arm about 150 yards E of the cabin.

(981) Small vessels can anchor in Twin Bays in 8 fathoms, flat sand bottom, when the Christmas tree rock bears 242°. Larger vessels should anchor in 16 fathoms, flat sand bottom, 0.6 mile off the rock when it bears 310°.

(982) **Hot Springs Bay,** on the Tanaga shore of Kanaga Pass 12 miles N of Cape Sasmik, is small but offers good protection from W weather. Low bluffs line the S shore with a rise at the head to a high ridge. Warm springs are along the central part of the S shore. The N shore is lined by steep bluffs rising toward the mountains; a prominent waterfall is 0.3 mile from the head. A good sand beach is at the foot of a low valley; a stream enters the bay at the S end of the beach. Two cabins are just in back of the beach near its N end.

(983) The only off-lying danger in Hot Springs Bay is **Village Reef,** 600 yards off the S shore 1 mile NW of Trunk Point. Good anchorage is found in 13 to 17 fathoms, sand bottom; small craft may anchor in shoaler water close to the beach.

(984) **Charts 16460, 16471, 16467, 16463.**–The N coast of Kanaga Island W of Cape Miga trends S for 7 miles, then SW for 20 miles to Kanaga Pass. From Cape Miga for 7 miles S to **Belleview Beach,** the coast is steep-to with off-lying dangers within 0.5 mile of the shore. The 2-mile sand beach is backed by low ground and dunes. Good anchorage is afforded in SE weather off the beach; avoid the several detached offshore rocks. Landings can be made on the beach.

(985) The coast between Belleview Beach and Kanaga Pass is generally rocky and irregular, with a wide band of kelp and rocks parallel to the shore. Most of the points of land are low rocky cliffs; steep grass bluffs between the points rise to the relatively flat and rolling interior. The coast should be given a clearance of 1.5 miles to avoid the dangers.

(986) **Ship Rock,** 1 mile offshore and 5 miles W of Belleview Beach, is 49 feet high and resembles a ship; foul ground is between the rocky islet and the shore. Good anchorage in S weather can be had 4.5 miles W of Ship Rock in the cove W of **Cabin Point** in 18 fathoms, smooth sand bottom; approach with caution to avoid the covered rocks and pinnacles off Cabin Point and Pincer Point. A trapper's cabin is on the W side of Cabin Point. A group of pinnacles, covered 7 to 25 feet and marked by kelp, is 0.4 mile off double-ended **Pincer Point,** 5.2 miles W of Ship Rock.

(987) **Hive Rock,** 7.5 miles W of Ship Rock and 0.4 mile offshore, is an 80-foot-high hive-shaped pinnacle. Heavy kelp is between the rock and the shore. Good anchorage is afforded in S weather 0.6 mile NE of the rock in 20 fathoms, smooth sand bottom; approach should be made from the N. A rock that uncovers and marked by kelp is 1.3 miles offshore, 8.7 miles W of Ship Rock; foul ground is between the rock and the shore.

(988) **The Signals,** a prominent 60-foot-high twin-pinnacled rock is 0.3 mile off **Northwest Point,** 10.2 miles W of Ship Rock. **Coolie Hat,** 1.3 miles SE of Northwest Point, is a prominent 284-foot black cinder hill shaped like the crown of a coolie hat.

(989) **Chart 16463.–Bobrof Island,** 6 miles NE of Cape Sudak, Tanaga Island, is more than 2 miles long and almost 2 miles wide. The shoreline on all sides except the N is rocky and precipitous, with steep slopes rising abruptly to 2,419-foot **Bobrof Volcano.** The N point of the island, connected by a low grassy area to the base of the volcano, consists of a very prominent flat-topped 402-foot-high cylinder-shaped peak of black lava having bare vertical sides. It appears to be separated from the rest of the island when viewed offshore from the E or W.

(990) Currents are strong on all sides of Bobrof Island and the waters appear disturbed for 1 mile offshore. Dangers are within 0.2 mile of the shore; the 10-fathom curve is less than 0.5 mile offshore. A band of impenetrable kelp parallels the NW coast to 0.3 mile offshore.

(991) **Chart 16460.–Tanaga Island,** across Kanaga Pass from Kanaga Island, is irregular in shape with greatest N-S length of 20 miles and E-W width of 23 miles. The N part of the island is high and mountainous, while the S part is low with many streams and small lakes or ponds. The N shore has precipitous rocky cliffs or very steep slopes which rise to the interior mountains. The other shores are rocky cliffs or reefs with numerous along shore pinnacles, except for beaches in Tanaga Bay and a few other places. The S coast and much of the E coast of Tanaga Island is fringed with detached rocks, reefs, and foul ground. Extensive kelp patches are in the foul areas. The dangers can be avoided by clearing the coast by over 2 miles.

(992) **Chart 16463.**–The first 12 miles of the N coast of Tanaga Island between Cape Sudak and **Gage Point** is indented with coves that provide anchorage. The 30-fathom curve is 1 mile or less offshore; all dangers are within 0.5 mile of the shore.

(993) **Portage Bight,** 5 miles W of Cape Sudak, affords a good weather anchorage in 18 fathoms, sandy bottom.

(994) **Rough Bay,** 8 miles W of Cape Sudak, is not recommended as an anchorage because of violent williwaws in S and W weather. A dangerous rock, 0.4 mile NE of the W entrance point, is awash at low water. A large shoal area, marked by kelp, makes out from the SE shore to the middle of the bay. A sand beach is at the head and a deep valley extends inland.

(995) **Gusty Bay,** 10 miles W of Cape Sudak, affords good anchorage in S weather. The gusty winds frequently encountered do not, as a rule, impair safe anchorage. Two shallow valleys, sepa-

rated by a bold headland, are at the head of the bay; a trapper's cabin is in the SE corner at the mouth of a large stream.

(996) **Pillbox Rock,** 0.1 mile off the steep-sided, square-faced E entrance point to Gusty Bay, is a 150-foot-high conspicuous dome-shaped pinnacle with grass on top; a 50-foot-high sharp-pointed pinnacle is just N of it. All dangers are within 0.5 mile of the shore. Anchor in the center of the bay with the sharp pinnacle bearing 118°, in 16 fathoms, sand bottom.

(997) **Chart 16462.**–The N coast of Tanaga Island between Gage Point and **Cape Sajaka** is very irregular with many vertical lava cliffs. A large waterfall, 2.5 miles W of **Bumpy Point,** is 348 feet high and pours from the top of a vertical cliff. Dangers are within 0.5 mile of the shore. Currents are strong along this stretch of coast.

(998) The two prominent peaks in the interior are connected by a saddle; the E one is about 4,600 feet high and the W, **Tanaga Volcano,** is 5,925 feet high.

(999) From Cape Sajaka SE to Tanaga Bay several shallow valleys with black sand or gravel beaches across them indent the otherwise mountainous interior. **Blackface Point,** 7 miles SE of Cape Sajaka, is a prominent headland with black rock cliffs near the top of steep grassy bluffs. Dangers are within 0.5 mile of the shore. In good weather vessels may anchor 3 miles NW of **Cape Agamsik,** 0.8 mile off the sand beach, in 15 fathoms, flat sand bottom.

(1000) **Tanaga Bay,** on the W side of Tanaga Island, affords protection from all except W weather. The bay is a good anchorage for large and small vessels; depths and places can be selected as desired. The bottom is uniformly fine, black, hard sand with only fair holding qualities in heavy weather. The head of the bay shoals gradually from 2 miles out to a sand beach. The S shore is irregular with reefs and kelp beds. Dangers are within 0.7 mile of the bay shore. Several visible rocks on **Middle Ledge,** that extend almost 0.5 mile offshore at the head of the bay, are of some assistance when anchoring near the head.

(1001) **Cable Bay,** a small cove on the N side of Tanaga Bay E of prominent Cape Agamsik, affords protection to small craft in W weather. Water is available at the head of the bay.

(1002) **Cape Amagalik,** on the S side of the entrance to Tanaga Bay, is low but backed by higher grassy hills. A shoal extends 1.5 miles W of the cape. A dangerous reef, marked with heavy kelp and rocks, is inside the shoal area. Tide rips are severe off the cape. All vessels should clear the cape by at least 4 miles when a moderate swell is running against the current. Small vessels should not attempt passage with a heavy swell running. Seas 12 to 14 feet high have been encountered in the area in moderate weather. A flood current of 3 knots has been observed; larger velocities probably occur. The flood sets N and the ebb S.

(1003) Tide rips have been observed on the 26-fathom bank 4 miles NW of Cape Amaglik.

(1004) A skeleton tower on top of a 145-foot bluff on the S side of Cape Amagalik and **Harem Rock,** 0.6 mile SW of the tower and usually marked by heavy breakers, are prominent.

(1005) **Lash Bay,** 3 miles E by S of Cape Amagalik, is the site of an abandoned World War II military installation. Only small craft should enter the bay, and then with caution under favorable weather conditions. The inshore part of a 600-foot wharf remains at the head of the bay; a depth of 8 feet is off its outer end. Broken piling of the outer section of the wharf is covered and constitutes a real danger. Two diamond-shaped targets set on a hill just W of the wharf form an entrance range on course **002°.** A shoal covered less than 3 fathoms is in the approach on the range line extended; dangerous covered rocks are near both sides of the range line approaching the head. The bay is useful only as a temporary anchorage because of limited swinging room and shoal water.

(1006) **Scarab Rock,** 0.6 mile WSW of **Tidgituk Island,** is 50 feet high and prominent.

(1007) **South Bay,** on the S coast of Tanaga Island just W of Cape Sasmik, affords anchorage during N and E weather. A reef that uncovers extends 0.5 mile S from the center of the head of the bay; a shoal with depths of 7 to 2 fathoms continues S for another 0.5 mile. A trapper's cabin is near the mouth of a stream NE of the reef. Anchor in the E half of the bay, 0.5 mile off the E shore, in 12 fathoms, flat sand bottom.

(1008) **Chart 16460.–Tanaga Pass,** between Tanaga Island and the Delarof Islands, is 13 miles wide at its narrowest part. Depths of 50 fathoms or more can be carried through the pass by keeping 6 miles off Cape Amagalik, Tanaga Island, and 3 miles off the Delarof Islands.

(1009) **Currents.**–The direction and velocity of the current is radically affected by the land areas and the banks. It appears that the flood is diverted by the chain of islands - Skagul to Unalga - and the relatively shoal water between them to an E and W direction in moving around this chain. It was observed that S of Skagul Island the flood sets about NE, E of this island it sets N, and N of the island it sets N to NW.

(1010) With erratic currents of this nature, dead reckoning cannot be depended on and the navigator may find his vessel 1 mile or more off his reckoning after a run of 1 hour.

(1011) During observations made 4.5 miles SW of Cape Amagalik, the current was rotary, turning clockwise, and followed a definite pattern. A minimum current averaging about 0.8 knot sets N to NE. As the current turned through E to S the velocity built up rapidly until it reached 3 knots. The velocity decreased to about 2 knots and at time of low water set WSW. The current turned NW, and the velocity increased to a maximum of 3 knots. The current continued NW to N until the velocity averaged about 0.8 knot. The current then set NW at a velocity of 2 knots. The current turned through N to NE and decreased in velocity to a minimum of 0.8 knot.

(1012) On the opposite side of the pass, 4 miles E of Ugidak Island, velocities of over 3 knots were observed.

(1013) Between Kavalga and Ulak Islands, the flood was observed to set to the NW.

(1014) Tide rips and swirls may be encountered in any part of this area, except well off the land areas in deep water. Generally they will be encountered where a radical change in depth deflects the natural flow of the current or where land masses affect this flow. The ebb appears to produce the heaviest rips and they are most pronounced during the greatest range of tides. Also, strong winds and heavy seas, opposing the flow of the current, cause large rips.

(1015) Rips and swirls were observed by survey vessels to be particularly heavy to a distance of approximately 4 miles W of Cape Amagalik. This area is dangerous to small craft except in favorable weather and should be avoided by medium-sized craft under adverse conditions of current and sea or swell. Under unfavorable weather conditions, it is advisable to round this cape outside the 50-fathom curve.

(1016) Heavy tide rips have been observed off Cape Sajaka; on the bank between Skagul and Ilak Islands; and on the shoal that extends W from Unalga Island.

(1017) (See the Tidal Current Tables for predictions.)

(1018) The **Delarof Islands,** between Tanaga Pass and Amchitka Pass, are a group of nine islands and several small islets and rocks covering an area of 38 miles N-S and 33 miles E-W.

(1019) **Ilak Island,** the easternmost in the Delarof group, is 188 feet high on a ridge near the NE shore. The highest bluffs are on the N and E sides. From offshore the island appears tablelike; the top slopes gently from E toward the W shore. The shoreline is broken and surrounded by detached islets, rocks, and reefs up to 2 miles W of the island and 0.5 mile on the other sides. **Gramp Rock,** 1.5 miles W of Ilak Island, is the breeding ground for sea lions. The 15-foot-high pinnacle 0.5 mile off the N shore of the island is prominent. Strong currents and tide rips are near the island.

(1020) Gramp Rock is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the entire island. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(1021) **Ugidak Island,** the easternmost of a chain of four islands in the central part of the Delarof group, is 75 feet high, small, and rocky. The waters around the island are deep; currents are strong and tide rips, dangerous to small boats, may be encountered.

(1022) **Skagul Island** and **Ogliuga Island,** 2.5 to 7 miles W of Ugidak Island, are surrounded by numerous rocks, reefs, and kelp beds. An emergency landing field and buildings are on Ogliuga Island; a tower near the N shore is prominent.

(1023) **Skagul Pass,** between Skagul and Ogliuga Islands, is only for small craft. Currents in the pass are very strong and tide rips develop when sea and current are opposed. Kelp in the pass is towed under when the current is running.

(1024) A good anchorage from N weather is 1.2 miles S of Skagul Pass in 17 fathoms, sand and gravel bottom.

(1025) **Tag Islands,** a group of rocky islets 3 miles SW of Ugidak Island, are the breeding grounds for sea lions; the highest point is 75 feet. Several rocky islets are between these islets and Skagul Island.

(1026) Tag Islands are a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the islands which also encompasses Skagul Island. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(1027) **Kavalga Island,** 10 miles W of Ugidak Island, is 5 miles long with greatest width of 1.5 miles; the highest point is 315 feet. The 1-mile-long prominent headland at the W end of the island is 180 feet high and connected to the mainland by a low gravel beach. Most of the island is covered with tundra. The shores are fringed with prominent rocks and reefs.

(1028) There are several reefs and rocks, large kelp beds, and winding channels 2 to 5 fathoms deep between Ogliuga Island and Kavalga Island. Large numbers of sea otter have been seen in this area. **Ogliuga Pass,** close to Ogliuga Island, is only for small craft.

(1029) **Sea Otter Pass,** 0.7 mile NE of Kavalga Island, has depths of 5 fathoms in the 0.4 mile-wide channel. The pass is fringed with heavy kelp and prominent 3-foot-high rocky islets; some kelp grows in the channel. Currents in the pass are moderate.

(1030) A good anchorage during S gales is 1-mile N of Kavalga Island in 22 fathoms, sand and gravel bottom.

(1031) A bank with a least depth of 18 fathoms is between Kavalga Island and Unalga Island. Currents in this area are very strong; dangerous tide rips develop when the sea or wind and current are opposed. The waters are extremely dangerous for small boats; under extreme conditions the area may also be dangerous for larger vessels. Vessels using the pass should clear Kavalga Island and Unalga Island by not less than 2 miles.

(1032) **Unalga Island,** the westernmost of the central Delarof group, is 240 feet high, grass covered, rimmed with steep bluffs, and flat on top. The shore is fringed by rocks and reefs. Prominent are a 50-foot-high rock 0.5 mile NW of the island and **Dinkum Rocks,** 0.8 mile SW of the island.

(1033) **Gareloi Island,** the northernmost of the Delarof group and 20 miles W of Tanaga Island, is almost circular and about 5 miles in diameter. **Mount Gareloi,** a 5,160-foot active volcanic crater, is near the center at the summit of the island; a smaller peak is S of the summit. The land slopes steeply to the summit, except near the NW side where the slopes are more gradual. The island consists of lava rock, black lava, eroded lava, and ashes; the lower slopes and valleys are covered with grass and tundra in many places. The shores have steep cliffs with rocks and boulders at the base; boulders, pinnacles, and rocks awash extend around the shoreline. Heavy kelp surrounds most of the island, and extends offshore to 10 fathoms. Depths of 10 fathoms or more are within 0.5 mile of the island.

(1034) A trapper's hut is on the beach above the N shore of Gareloi Island. In moderate weather the survey ship anchored off the lee shore in the bight on the SE side, 800 to 1,000 yards offshore, in 25 to 35 fathoms. The current velocity is about 0.5 knot off the SE shore and sets NE and SW.

(1035) **Local magnetic disturbance.**–Differences of as much as 7° from normal variation have been observed on Gareloi Island SE of Mount Gareloi.

(1036) **Ulak Island** and **Amatignak Island,** 3 miles apart, are the southernmost of the Delarof group.

(1037) Ulak Island is irregular in shape, 6 miles long, and over 3 miles wide at the center. There are two high points on the island, one on the ridge near the N shore and the other toward the S part of the island. Numerous rocks and islets border the island; several reefs are close to shore and near the off-lying rocky islets. Strong currents and tide rips have been observed as far as 3 miles SE of the island. **Pratt Cove,** on the W side of the island, can be used as an emergency anchorage; currents are noticeable and the bottom is rocky. **Patton Cove,** on the S coast, is a good anchorage for N and NW weather; there is very little current and the bottom is sandy.

(1038) The SE shore of **Hasgox Point** on Ulak Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the rookery which encompasses all except the N half of the island. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(1039) **Tanadak Island,** 1 mile off the W coast of Ulak Island, is low and not prominent. A prominent 30-foot rock is 0.2 mile NW of the island. The survey ship used an anchorage 0.7 mile E of the island.

(1040) **Ulak Pass,** between Ulak and Amatignak Islands, is 3 miles wide and has depths of 35 fathoms or more. The current velocity is over 2 knots in the pass and sets NW and SE. A midchannel course should be followed to avoid the rocks and islets near the shores of the islands.

(1041) **Amatignak Island,** the southernmost of the Aleutian Chain, is within 40 miles of the Seattle-Yokohama composite course. The rugged island is 5 miles long and 3 miles wide; the high tundra-covered hills and bare ridges and mountains of the interior rise to a height of 1,875 feet. The shores are generally steep and fringed with rocks; the W and NW coasts are steep-to.

(1042) **Knob Point,** a peninsula with a conspicuous knob-shaped hill, is on the E side of Amatignak Island. **Ulva Cove,** just N of Knob Point, is used as a small-boat anchorage. The survey ship anchored off the entrance in 25 fathoms. Protection is fair from W and SW gales except when there is a S and SE swell from the Pacific. A boulder beach is in back of the cove and a trapper's cabin is on the small flat area at the head. A prominent waterfall is 1 mile N of the cove.

(1043) **Nitrof Point,** a rocky peninsula at the S end of Amatignak Island, is narrow and steep with conspicuous off-lying pinnacles. A rock awash with frequent breakers is 0.5 mile SSW of the most S pinnacle rocks. A foul area extends 0.6 mile offshore midway between Nitrof and Knob Points.

(1044) The W coast of Amatignak Island is very broken with prominent pinnacle rocks, steep cliffs, and small coves; rocks awash fringe the shore. A prominent 170-foot dome-shaped pinnacle off the NW coast makes a good landmark. A small deep cove on the NW coast affords the best protection for landings on the W side of the island.

(1045) **Amchitka Pass,** between the Delarof Islands and the Rat Islands, has a least width of 50 miles and depths of 49 to over 1,000 fathoms. The islands on both sides of the pass should be cleared by at least 5 miles. Heavy tide rips have been observed off the E end of Amchitka Island. The pass is dangerous in heavy weather, particularly for small and medium craft; currents appear erratic in direction and velocities may be strong. This may account for reports of very large seas and strong tide rips.

(1046) **Chart 16440.**–The **Rat Islands,** between Amchitka Pass and **Buldir Island,** are a group of six large islands and several smaller ones covering an area of 60 miles N-S and almost 150 miles E-W. Strong williwaws frequently occur on the leeward sides of the N islands during periods of light to moderate breezes on the windward sides. Areas of clear weather are often found on the leeward sides during periods of heavy fog.

(1047) **Chart 16460.–Semisopochnoi Island,** the northeasternmost of the Rat group, has a N-S length of 9.5 miles and an E-W width of 11 miles. The numerous rugged ridges and peaks, 1,200 to over 4,000 feet high, surround an interior valley with a small lake 300 feet above sea level. Most of the peaks or cones have deep craters and appear flat-topped from offshore. The shore is almost entirely steep cliffs or bluffs fringed with a narrow, rough, boulder beach; kelp is alongshore. Dangers are within 400 yards of the shore, but the island should be cleared 1 mile or more. The W current velocity is about 1 knot and the E current about 1.5 knots, but a 3-knot current may be encountered at times. The currents are usually accompanied by tide rips off the points.

(1048) **Sugarloaf Head,** at the S end of Semisopochnoi Island, is a rounding, low, irregular, rocky point forming the S base of a 2,870-foot snow-capped conical peak which has a prominent secondary conical crater 1,620 feet high on its S slope. The small bight just E of the head has a section of sloping sand beach which is fronted by several lines of breakers. Two small bights with sloping boulder beaches are about 1 and 2 miles W of the head.

(1049) The valley drains to the SE coast of the island between Sugarloaf Head and a jagged ridge with twin pinnacles more than 3,000 feet high to the NE. E from the lake area, a low pass 600 to 800 feet high leads between steep cliffs to a broad grass-covered valley at the head of a small bight S of **Pochnoi Point,** the E end of the island. The point is broad, somewhat flat, and terminates in sheer rock cliffs about 300 feet high. A small stretch of sloping sand beach at the head of the bight is the best landing place on the island, but it is fronted by a small sand bar about 25 yards offshore.

(1050) **Petrel Point,** the N end of the island, has a prominent waterfall on its NW tip that makes a sheer drop from the top of the bluff. Two small bights with sloping boulder beaches are about 2 and 4 miles along the shore SE of Petrel Point.

(1051) The E shore of Pochnoi Point and the N shore of Petrel Point on Semisopochnoi Island are Steller sea lion rookery sites. There is a 3-mile vessel exclusionary buffer zone around each rookery which encompasses the NE half of the island. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(1052) NW of the lake area, the old crater wall rises steeply to a ridge with two prominent cones. **Tuman Point,** at the W end of the island, is faced with steep bluffs. A prominent triangular-shaped face of a 1,200-foot peak that drops steeply to the shore is 1.5 miles E along the N shore of the point. A sloping boulder beach is about 2 miles E of the point. In the broad but slight bight just S of Tuman Point are small stretches of sloping sand beach, but they must be approached through heavy kelp growing on large boulder rocks.

(1053) The best anchorage at Semisopochnoi Island is 1 mile offshore between Tuman Point and Petrel Point in 18 to 22 fathoms, sand and gravel bottom. This is inshore of the strength of the current, the approach is unrestricted, and it is well protected from most directions. Good anchorage is available in the center of the bight S of Pochnoi Point in 15 to 22 fathoms, sand bottom; it is free of tide rips and the current that prevails around the point. A fair anchorage is 1 mile offshore midway between Pochnoi Point and Petrel Point in 27 fathoms, sand bottom; current is about 1.5 knots. Another fair anchorage is 2 miles W of Sugarloaf Head in 25 to 30 fathoms, sand and gravel bottom.

(1054) **Local magnetic disturbance.**–Differences of as much as 7° from normal variation have been observed near Sugarloaf Head on Semisopochnoi Island.

(1055) **Petrel Bank,** that extends about 30 miles NE from Semisopochnoi Island, is 16 to 20 miles wide within the 100 fathom curve. The high point on the ridge, covered 21 fathoms, is 15 miles NE of the island. A narrow ridge that extends 30 miles NE of Petrel Bank has ridges of 38 and 48 fathoms. The tidal current on Petrel Bank is rotary, turning clockwise. (See the Tidal Current Tables for predictions for Petrel Bank.)

(1056) **Chart 16012.–Bowers Ridge** extends N and W from Petrel Bank in a circular direction for nearly 250 miles. The ridge between the 1,000 fathom curves is 30 to 35 miles wide and contains several well-defined ridges. **Bowers Bank** about midway along the ridge, had a least depth of 6 fathoms reported in 1971.

(1057) **Chart 16440.–Amchitka Island,** 27 miles SW of Semisopochnoi Island, has a NW-SE length of 34 miles and a greatest width of 4.5 miles. The SE part is very low, the highest

point being 351 feet. The NW section is hilly and much higher, with peaks rising to 1,200 feet. The high land levels out toward the middle of the island to a low, rolling tundra and flat tableland. Many lakes and ponds are on the S half and a portion of the N half of the island. Most of the coast is fringed with reefs and extensive kelp beds. The shores are generally steep with many off-lying covered rocks, especially on the N shore and the E part of the S shore. Vessels should stay outside the 50-fathom curve, up to 4 miles off the N shore and 7 miles off the S shore, unless proceeding to anchorage. Weak tidal currents have been observed along the S side of the island.

(1058) In December 1986, Amchitka Island and the nearby surrounding waters were closed to the public. The island is a military reservation. (See **50 CFR 36.39**; not carried in this Coast Pilot.)

(1059) **Local magnetic disturbance.**–Differences of as much as 5° from the normal variation have been observed on Amchitka Island.

(1060) **South Bight,** 3 miles W of **East Cape,** is an excellent emergency anchorage on the S coast of Amchitka Island, offering shelter during N weather.

(1061) East Cape and**Column Rocks** are Steller sea lion rookery sites. There is a 3-mile vessel exclusionary zone around these rookeries which encompass the entire cape including South Bight and surround column Rocks. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(1062) **Chart 16446.–Constantine Harbor,** on the N side of Amchitka Island 6 miles W of East Cape, provides a fair anchorage. Because there are no prominent features on the island, caution is necessary to avoid mistaking other indentations for Constantine Harbor.

(1063) The S side of Constantine Harbor entrance is foul for 0.5 mile offshore. On the N side a reef, covered less than 2 fathoms in places and marked by heavy kelp, extends almost 1.5 miles E of **Kirilof Point.** The head of the harbor is a sand beach; other shores are rocky bluffs.

(1064) Currents in the entrance to Constantine Harbor are strong and set across the narrow entrance channel. N to NE gales may force vessels anchored in the harbor out to sea. The harbor is reported free of williwaws.

(1065) **Local magnetic disturbance.**–Differences of as much as 5° from the normal variation have been observed in Constantine Harbor.

(1066) The 0.2-mile-wide channel between the reefs at the entrance can be made on course **235°;** depths are 20 to 30 fathoms. Once inside anchorage is available in 6 to 20 fathoms, fair holding ground in sand and shell bottom.

(1067) **Chart 16440.–Kirilof Bay,** on the N side of Amchitka Island 8.5 miles W of East Cape, is suitable only for small boats. Breakers have been reported to run across the entire entrance to the bay.

(1068) **Chitka Cove,** 24 miles NW of East Cape, affords good protection from S and W weather. The approach is clear except for a 3-fathom shoal 0.7 mile NW of **Chitka Point.** Anchor 0.7 mile offshore in 18 to 20 fathoms with good holding ground in sand bottom.

(1069) Good protection from S winds can be had 0.7 mile offshore 1.5 miles E of **Bird Cape,** the NW end of the island. The anchorage is midway between a kelp patch off the E side of the cape and a rock awash off the first small point to the E of the cape in 20 to 23 fathoms, sand bottom Enter on course **170°,** heading for a prominent 50-foot-high pinnacle rock.

(1070) Protection from N and NE winds can be had about 1 mile offshore 12 miles along the S coast of Amchitka Island from **Aleut Point,** the W end of the island. The anchorage is midway between two prominent rocks in 17 to 20 fathoms, sand bottom. Enter on a N course.

(1071) **Oglala Pass,** between Amchitka Island and Rat Island, is almost 10 miles wide; depths of 21 to over 30 fathoms can be carried through the middle of the pass. The current is somewhat rotary, turning clockwise. A 4-knot current has been measured in the middle of the pass; greater velocities may be experienced. Currents exceeding 7 knots have been encountered 1.5 miles NW of Amchitka Island. (See the Tidal Current Tables for predictions for Oglala Pass.) During moderately heavy S weather, heavy tide rips extend across the pass at maximum ebb and attain heights of 30 to 40 feet under storm conditions. The pass should not be attempted by small vessels during S weather when the current is ebbing strongly.

(1072) **Little Sitkin Island,** 32.5 miles W of Semisopochnoi Island, has a N-S length of 5.5 miles and an E-W width of the same distance. The interior is extremely rugged and mountainous; only the lower slopes are grass covered. There are two prominent peaks, one 3,897 feet high in the NE part, and the other 1,960 feet high in the S part. Numerous streams are on the island but no lakes or ponds. The coast is generally bold, rocky, and precipitous, with a fringe of kelp 200 to 400 yards wide. A bank with a least depth of 10 fathoms extends about 1 mile off the N shore. No dangers are more than 600 yards from the beach. (See the Tidal Current Tables for predictions.)

(1073) The sloping beach in the bight 1 mile E of **Prokhoda Point,** the S end of the island, is abrupt and composed of large, irregular boulders. Temporary anchorage, protected from W and NW winds, can be had 0.5 mile offshore 1.5 miles NE of Prokhoda Point in 22 to 25 fathoms, sand bottom.

(1074) A good anchorage in SW weather is 600 yards offshore 2 miles NW of **Pratt Point,** the E end of the island, in 20 fathoms, sandy bottom.

(1075) An anchorage protected from S swells in 0.7 to 1 mile offshore just E of **Patterson Point,** the N end of the island, in 20 to 25 fathoms, sand bottom. However, the williwaws off the island reach gale force with only a moderate SW wind and currents setting around the island cause tide rips.

(1076) Anchorage in **Williwaw Cove,** just W of Patterson Point, is not recommended. The beach at the head is flat and sandy, but bordered by several lines of breakers.

(1077) The sloping beach at the head of **William Cove,** 2 miles W of Patterson Point, is abrupt and composed of large, irregular boulders. Small steam jets and hot springs are in the valley at the head of the cove.

(1078) Small craft can anchor in the bight just N of **Sitkin Point,** the W end of the island, but strong williwaws are prevalent in E or NE weather. A large prominent tan-colored bluff is at the head of the bight.

(1079) Anchorage protected from the NE is 0.5 mile offshore in 25 to 30 fathoms, 0.7 mile SE of a prominent 100-foot islet about 1 mile S of Sitkin Point. The anchorage is fair in moderate NW and E winds.

(1080) **Little Sitkin Pass,** between Little Sitkin Island and Davidof Island, is 3 miles wide with depths of 48 fathoms or

more in the middle part. Moderately heavy tide rips occur in the pass during the strength of the tidal current.

(1081) **Rat Island Pass,** between Rat Island and the group of islands to the N, is 8 miles wide and has depths of more than 50 fathoms through a 4-mile middle width. Currents in the pass are moderate; some set may be expected opposite Little Sitkin Pass and Khvostof Pass. (See the Tidal Current Tables for predictions.)

(1082) **Chart 16441.–Rat Island,** 12 miles NW of Amchitka Island, is 8 miles long with a greatest width of 2 miles. The interior is rugged and mountainous, and the shores are rocky. Most of the N coast is precipitous and fringed with reefs; small islets and a reef extend 2 miles SE from **Ayugadak Point,** the E end of the island.

(1083) Ayugadak Point is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the rookery. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(1084) **Gunners Cove,** about midway along the N side of Rat Island, has depths of 1 to 12 fathoms, but is not suitable for anchorage. The bottom is smooth rock and the wind funnels through the cove. A prominent 50-foot cataract is at the head of the cove.

(1085) Protection for small vessels in W weather is available off the entrance to Gunners Cove in 17 fathoms. Rocks and reefs on both sides of the cove restrict the swinging room. Larger vessels can anchor farther off the cove in 28 fathoms, sand bottom. The anchorage on the SW coast of Little Sitkin Island offers protection from NE weather.

(1086) Fair anchorage during S weather can be had 2 miles E of **Krysi Point,** the W end of Rat Island, in 28 fathoms. The slope between the 20- and 30-fathom curves is less abrupt at this anchorage than elsewhere along the N coast; however, the bottom is irregular inside the 20-fathom curve.

(1087) A good anchorage in N and E weather is 1.2 miles offshore midway along the S coast of Rat Island in 17 to 25 fathoms. The anchorage is 0.8 mile NW of the offshore group of rocky islets, 20 feet high, that is the dominant feature along this coast. Approach the anchorage from the SW, passing 0.6 mile W of the islets.

(1088) **Davidof Island,** 7.5 miles N of Rat Island, is irregular in shape with a N-S length of 2 miles and a greatest width of 0.7 mile. The high point in the S part is 1,074 feet and the summit in the N part is 922 feet high. The projecting E point of the island is marked by a prominent cone-shaped grayish-tan summit. An islet and a knife-edged pinnacle are close off the N end of the island.

(1089) **Khvostof Island,** 1 mile NW of Davidof Island, is 1.5 miles long and 0.8 mile wide. The interior is rugged and mountainous; the highest peak of 870 feet is in the W part. Prominent twin rock pinnacles are close off the N end of the island, and a low flat rock is 700 yards off the NW shore. A 1½-fathom shoal is 0.4 mile off the N point of the island.

(1090) The passage between Davidof Island and Khvostof Island is partially blocked by small and rugged **Pyramid Island.** The openings on either side of Pyramid Island are narrow and foul, and have extremely heavy kelp. The blocked passage helps protect **Crater Bay,** NE of Pyramid Island from SE to SW weather. Use of Crater Bay is restricted by a 2½-fathom shoal 0.6 mile N of Pyramid Island. The part of the bay between Pyramid Island and Davidof Island is clear but too deep for anchorage except close under the shore of Davidof Island, where small craft can find excellent protection. Small craft can also anchor, with limited swinging room, close under the NE shore of Khvostof Island. Large vessels can anchor, free from tidal current, just inside the 30-fathom curve midway between the N end of Khvostof Island and the knife-edged pinnacle off the N end of Davidof Island.

(1091) **Khvostof Pass,** between Khvostof Island and Segula Island, is deep and clear and may be navigated without difficulty. The pass is subject to heavy tide rips at strength of spring currents, especially with moderate breezes from any direction.

(1092) **Segula Island,** 10 miles NW of Rat Island and the most W of the group on the N side of Rat Island Pass, has a N-S length of 4 miles and an E-W width of 3.6 miles. The island is a lone crater-topped mountain, rising to 3,784 feet. A prominent deep fissure is on the S face of the mountain. Just W of the break is a broad, grassy slope that extends to the rocky bluff midway along the S shore.

(1093) **Iron Point,** on the SE corner of the island, is a narrow, grass-covered, rock bluff 72 feet high; foul ground, marked by kelp and a breaker, extends 500 yards from the point. **Gula Point,** the northernmost tip of the island, is low, narrow, and grass covered. A distinctive dark, round-topped hill is at the end of the long ridge E of the small cove on the N side of the island, W of Gula Point. The cove entrance is nearly closed by reefs.

(1094) On the S side of **Zapad Head,** at the NW corner of the island, a prominent grass-covered slope rises gradually from the gravel beach of a small bight; protected anchorage for small craft is afforded in the bight during moderate NE to SW weather.

(1095) A line of high, steep pinnacles extends W from **Chugul Point,** at the SW corner of the island. Between Zapad Head and Chugul Point irregular bottom, marked by heavy kelp, extends 800 yards offshore.

(1096) **Segula Pass,** between Segula Island and McArthur Reef, is wide, deep, and clear. Courses through the pass should be shaped to clear Segula Island by at least 1 mile and McArthur Reef by at least 2 miles.

(1097) **McArthur Reef,** 8 miles W of Segula Island and about the same distance E of Kiska Island, is a **menace to navigation.** The reef is about 0.8 mile in diameter, it does not uncover, and it does not break continuously even in a moderate swell at low water. The reef is not readily visible except close aboard, and then can be identified only by a small area of slick water surrounding kelp.

(1098) **McArthur Pass,** between McArthur Reef and Kiska Island, is deep and clear and can be navigated without difficulty.

(1099) **Krysi Pass,** between Rat Island and Sea Lion Rock, has a jagged ridge covered in some places with only 2 to 4 fathoms that extends across it. (See the Tidal Current Tables for predictions.) The pass is not recommended.

(1100) **Sea Lion Rock,** 9 miles WNW of Rat Island and 8 miles ESE of Tanadak Island, is less than 200 yards in extent and is about 10 feet high. A thick kelp bed around the rock extends 2 miles E and the same distance W.

(1101) **Sea Lion Pass,** between Sea Lion Rock and Tanadak Island, has depths of more than 20 fathoms over a 2-mile width near the middle. Sea Lion Rock is an uncertain target except in calm weather. Tide rips dangerous to small vessels may occur in the pass during spring tides. Tidal currents of 4 knots have been observed. (See the Tidal Current Tables for predictions.)

(1102) **Kiska Island** is about 600 miles W of Unalaska Bay and is the most important of the Rat Islands because of its well-sheltered anchorage. It is about 22 miles long and varies in width from 1.5 to 6 miles. The island is very rugged and moun-

tainous, the N end being dominated by **Kiska Volcano.** The crater of the volcano has two tips, the W and slightly higher being 4,004 feet high. Immediately S of the volcano is a low valley about 2 miles wide in which are several salt water lakes. The valley extends nearly across the island from a long, low stretch of shoreline on the W coast, and a narrow draw leads over a low ridge at the head of the valley to a small steep-to sand beach on the E coast.

(1103) Flat-topped, boulder-strewn ridges rise to over 1,000 feet between the lake area and Kiska Harbor. A low, narrow pass cuts across the island from the SW corner of Kiska Harbor to a small, foul bight on the W coast. S of this pass, sharp, rugged ridges 1,500 to 1,700 feet high extend to the SW corner of the island. These ridges are precipitous on their W sides, but slope gradually on their E sides to the shore of Vega Bay. The valleys and lower slopes of the island are covered with tundra and grass, while the higher parts are generally bare and strewn with boulders, especially the ridges N of Kiska Harbor.

(1104) The shores of Kiska Island are mostly rocky and steep and bordered in many places by covered and uncovered rocks. Kelp fringes most of the island. Kiska Harbor and Vega Bay are the two principal indentations of the coast.

(1105) **Naval Defensive Sea Area and Airspace Reservation.–**Under the authority of Executive Orders 8680 of February 14, 1941 and 8729 of April 2, 1941, Kiska Island is a designated Naval Defensive Sea Area and Airspace Reservation. Restrictions imposed under the authority of the above executive orders have been suspended subject to reinstatement without notice at any time that the interests of national defense may require such action.

(1106) **Sirius Point** is a jutting rock ledge at the N tip of Kiska Island, and the coast for more than 2 miles in either direction is formed of irregular, steep, rock cliffs and minor points. Deep water extends to within 0.5 mile of the shore. The sharp rocky point at the NE corner of the island is topped by a grass-covered hill conspicuous from the NW and SE.

(1107) In 1965, a volcanic outgrowth was observed making out from shore for a distance of 0.3 mile on the west side of Sirius Point.

(1108) **Pillar Rock,** 118 feet high, is a perpendicular rock of remarkable form 9 miles W of Sirius Point and 6.6 miles from the nearest part of the island. **Sturdevant Rock,** covered about 7 fathoms, is 3 miles 282° from Pillar Rock.

(1109) **Northeast Rocks,** with a high point of 115 feet, and **Haycock Rock,** a lone 113-foot pinnacle 1 mile to the S, are 0.4 mile off the coast E of the volcano. These rocks mark the outer limits of an extensive foul area and are excellent landmarks for visual or radar navigation. Behind Northeast Rocks is a prominent red bluff which is frequently visible when the other parts of the island are obscured by low clouds or fog.

(1110) Between Haycock Rock and Sredni Point, 2.5 miles to the SW, is **Sredni Bight,** an open bight that affords good shelter from NW weather in 15 to 20 fathoms, sandy bottom, 0.7 to 0.9 mile from the beach. The anchorage may be entered on a course of **285°,** heading for the end of the bluff that marks the S side of the small, sandy beach at the head of the bight. Moderate williwaws may be expected, and swells enter the anchorage after a storm in the Bering Sea.

(1111) **Sredni Point** is sharp, sheer, and high. SW from the point to Reynard Cove and Salmon Lagoon, the high cliffs are bordered by detached pinnacles, rocks awash, and submerged rocks. This section of coast should not be approached closer than 1 mile.

(1112) **Reynard Cove,** 2 miles SW of Sredni Point, is blocked by a reef that extends nearly the entire width just inside the entrance.

(1113) **Salmon Lagoon,** 2 miles SW of Reynard Cove and the same distance N of Kiska Harbor, can be entered with a pulling boat at high water, but the channel through the low, sand, outer beach is sometimes closed and often shifts position.

(1114) Kiska Harbor and Little Kiska Island are discussed later in connection with chart 16442.

(1115) In general, the waters adjacent to the Pacific side of Kiska Island, from Little Kiska Island to Cape St. Stephen, are irregular in depth. Broken bottom, within the 30-fathom curve, extends 1.5 to 2 miles offshore. Submerged pinnacles rise in deep water in Vega Bay, off Sobaka Rock, and off Cape St. Stephen. The several small bays and coves between South Pass and Vega Bay are unsuitable for anchorage.

(1116) **Vega Bay** is a broad indentation between **Bukhti Point** and **Vega Point.** The W part of the bay has irregular bottom, with a 2¼-fathom shoal 1 mile 070° from Vega Point. The rest of the bay is clear except for inshore rocks. In N or W weather, good anchorage can be found in 22 to 30 fathoms, sand bottom, off the entrance to **Gertrude Cove** in the NE corner of the bay. A pair of gray pinnacles on the shore W of the cove bears 000° from the anchorage. The cove is a good anchorage for small vessels in all except SW weather.

(1117) **Sobaka Rock** is 1.4 miles 155° from Vega Point. About 2.4 miles due W of the rock is a 2½-fathom shoal. Because of possible set by currents, particular care is necessary to avoid this shoal in rounding the S end of Kiska Island. Heavy tide rips occur in this area.

(1118) **Dark Cove,** small and shallow, is on the SW side of Kiska Island just E of Cape St. Stephen. When the weather is rough outside, small boats have been able to land safely in the NE corner of the cove. Landing is impracticable with a swell from the SSW.

(1119) **Cape St. Stephen,** the southwesternmost point of Kiska Island, should be passed no closer than 3.5 miles to avoid broken ground in the area of the 8-fathom shoal 1.8 miles 230° from the S tip of the cape. Heavy tide rips occur in this area at strength of current.

(1120) Cape St. Stephan and **Lief Cove** are Steller sea lion rookery sites. There is a 3-mile vessel exclusionary buffer zone around these rookeries. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(1121) From Cape St. Stephen, the shoreline, that extends about 15 miles in a NE direction to Witchcraft Point, is in general steep and rocky and indented by several small bights. Deep water extends to within 0.5 to 0.8 mile of the shore for the first 12 miles. Several pinnacle rocks and rocks awash fringe this part of the coast.

(1122) A prominent line of high rock pinnacles extends 700 yards offshore from **Witchcraft Point** on the NW side of Kiska Island. S of Witchcraft Point low grass-topped bluffs, interrupted by the valleys of two stream beds, extend 2.7 miles to **Conquer Point,** a sharp and sheer rocky point at the foot of a razorbacked hill about 965 feet high. A 2¾-fathom shoal is about 0.5 mile WNW, and two reefs with depths of 4 and 6 fathoms are about 1 mile off the latter point.

(1123) Temporary anchorage for small boats can be had in the small bight on the S side of the razorback, having due regard for charted dangers. The bight has a sand beach.

(1124) Anchorage, protected from moderate NE to SE breezes and swells, can be found in 25 fathoms, sand bottom, 0.8 mile off the coast 1.1 miles S of Witchcraft Point. The anchorage should be approached on a course of **110°,** heading for the small valley about midway between Witchcraft Point and the razorback to the S. In this anchorage Witchcraft Point is on range with Vulcan Point.

(1125) A low sand and gravel beach, with a prominent grass-topped knoll about midway of its length, extends 2.5 miles NE from Witchcraft Point. Then begins a rock cliff coast that extends 1 mile N to **Vulcan Point.** NE from Vulcan Point to Sirius Point, a distance of 3 miles, the coast is rocky and steep with deep water close to shore.

(1126) A reef, covered 5 fathoms, extends NW from Witchcraft Point for 2 miles toward Pillar Rock, then E to a point inshore about 2 miles S of Vulcan Point. Heavy kelp marks the reef in the summer, and extremely large tide rips occur in the area at strength of current, especially during spring tides. It is not advisable to approach the reef closer than the 30-fathom curve. Small craft passing between the reef and Pillar Rock should do so when the currents are near slack, which periods occur approximately at the same time as in Krysi Pass.

(1127) **Chart 16442.–Kiska Harbor,** midway along the E shore of Kiska Island, is formed by a small peninsula to the N which terminates at **North Head,** and a broad peninsula to the S which is separated from Little Kiska Island by South Pass; **South Head** is the NE point of the lower peninsula. The harbor proper is roughly circular with a 1.3-mile diameter, although anchoring depths extend an additional 0.5 mile to E. The NE and S sides are rocky cliffs; the entire W side of the harbor is low and sandy except for several ridges that extend to the water's edge. A low valley opening out at about the middle of the W shore extends well back into Kiska Island. A low ridge parallels the N shore at a distance of about 0.5 mile.

(1128) Depths do not exceed 17 fathoms inside a line between North and South Heads. The 10-fathom curve is 0.3 to 0.5 mile off the shores. Caution is necessary in anchoring to avoid fouling with the many wrecks and other obstructions in the harbor. The masts of one derelict show above water in 15 fathoms near the center of the harbor, and a 2¾-fathom obstruction is just inside the 10-fathom curve off the W shore.

(1129) **Anchorage** is recommended in the central part of the harbor in 13 fathoms 0.7 mile 185° from North Head. Shelter from NE to NW weather can be found in 15 fathoms 700 yards 150° from the outer end of the main wharf. The bottom is hard sand with fair holding qualities.

(1130) The diurnal range of **tide** is 3.6 feet in Kiska Harbor. (See the Tide Tables for predictions.)

(1131) The shortest **route** to Kiska Harbor from Seattle with the best visibility is via Unimak Pass and the Bering Sea. From San Francisco the shortest distance is via Chugul Pass and Asuksak Pass, 20 miles E of Adak Island, thence N of the Aleutian Islands to Kiska Harbor; however, a direct route through Amchitka Pass and Rat Island Pass is only a few miles farther. Oglala Pass can also be used for the approach from the S. Offshore dangers in the approach to Kiska Harbor are McArthur Reef and the 4-fathom rock 1.3 miles N of Tanadak Island.

(1132) A ship pier and a small-craft pier are on the N side of Kiska Harbor. The ship pier extends 500 yards out from the shore in a SE direction. In 1999, it was reported that most of the ship pier was in disrepair and that it was only usable by vessels drawing less than 15 feet. Also, only the shoreward 75 feet of the pier is usable to smaller vessels.

(1133) **Little Kiska Island,** 0.5 mile E of South Head on Kiska Island, is 3.2 miles long and 1 mile wide. The island is low and rocky, the highest point being 430 feet. The shores are, in general, rocky and often precipitous, although there is a small stretch of low beach facing on South Pass. The coasts in most places are fringed by covered and uncovered rocks; a group of islets or rocks extend about 700 yards from the W end of the island.

(1134) Anchorage with fair protection from the N can be found in 20 fathoms, irregular rocky bottom, S of the center of Little Kiska Island. The highest peak, with two knobs at the summit, should bear due N.

(1135) **South Pass,** between Kiska and Little Kiska Islands, is a narrow approach to Kiska Harbor from the SE. **Twin Rocks** is a group of small islets on the W side of the S entrance. A 2-fathom rock that breaks in rough weather, 1.2 miles NE of Twin Rocks, is a danger to vessels approaching the pass from the S.

(1136) A 100-yard wide channel with a swept depth of 24 feet is between a pinnacle covered 11 feet 230 yards NE of South Head and the near shore. E of this narrow channel, kelp patches show across South Pass to Little Kiska Island during slack water. Only light-draft vessels with local knowledge should use South Pass.

(1137) The current velocity is 4 knots in South Pass, the flood setting N and the ebb S. The ebb current is particularly strong S of the pass.

(1138) **Tanadak Island,** 2.7 miles E of Little Kiska Island and 8 miles W of Sea Lion Rock, is a small grass-covered plateau; cliffs rise from the water's edge or close behind it. Foul ground extends for more than 0.5 mile from the shores; irregular depths of less than 10 fathoms extend 4 miles SE of the island.

(1139) **Tanadak Pass,** between Tanadak and Little Kiska Islands, is 2.5 miles wide but is full of shoals with depths of 2 to 9 fathoms. A 225-yard-wide channel with a least depth of 12 fathoms is 0.6 mile W of a prominent 20-foot rock, the most W of those off Tanadak Island. A current velocity of 2.8 knots has been measured in the pass. Tanadak Pass is not recommended for deep-draft vessels.

(1140) **Caution.**–Heavy seasonal growth of kelp completely fills Tanadak Pass and surrounds Little Kiska Island.

(1141) **Chart 16440.–Buldir Island** is an isolated island between Kiska Island and the Semichi Islands. This island forms an excellent landmark for the W Aleutians. The island is about 4 miles long and 2 miles wide, rugged and mountainous. The highest summit 2,150 feet, is on the S part of the island. Two lesser summits 2,013 and 1,768 feet, are on the NE end. High, steep landslides are along the E end and on the SW side. The shores, in general, consist of cliffs either rising from the water's edge or backing, narrow rock and sand beaches. The island is a bird refuge.

(1142) A chain of bold rocks and conspicuous islets extends 1.2 miles NW from Buldir Island. The outermost of the three islets is 442 feet high, dome shaped, and an excellent landmark. It can often be seen by vessels passing to the N when Buldir Island is obscured by fog or thick weather. Tide rips are generally in evidence along the submerged ridge that extends 1.8 miles NW from the islet, but no dangerous shoals or reefs are on the ridge.

(1143) At the E end of the island are several groups of rocks, the farthest being about 0.3 mile offshore. The S coast is foul along-

shore and should be approached with caution. Other shores are less rocky. Heavy kelp nearly encircles the island and probably marks all inshore dangers. Vessels passing Buldir Island on any course should stay outside the 50-fathom curve.

(1144) The SE to the NW shore of Buldir Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around this rookery which encompasses the entire island. (See **50 CFR 223.202**, chapter 2, for limits and regulations.)

(1145) The anchorage on the NW side of Buldir Island is the shallow bight formed by the island and the chain of rocks and small islets that extend to the NW. With the exception of the narrow valley opposite the anchorage, the slopes rise precipitously from the shoreline to the peaks. The sandy beach at the mouth of the valley affords the best landing on the island and a small stream empties into the bight at this point. Good anchorage, free from strong currents, can be found in 15 fathoms, sand bottom, with the middle of the beach bearing 170°. The anchorage affords adequate protection in fresh SE to SW weather but not in severe storms from any direction. Anchorage suitable for moderate E weather can be found in 15 to 20 fathoms 1 mile from shore just S of the chain of rocks and islets.

(1146) Extending SE from Buldir Island to Kiska Island is a submerged ridge which is marked by heavy tide rips. **Buldir Reef,** 18 miles along the ridge from Buldir Island, is about 5 miles long and 0.5 mile wide. The dangerous part of the reef includes two areas where breakers can be observed. The E area is estimated to have depths of 2 to 3 fathoms over it. The W area, covered 3 fathoms, is of considerable extent and marked by heavy kelp beds.

(1147) A depth of 2½ fathoms is about 14.5 miles ESE of Buldir Reef in 52°06.5'N., 176°45.0'E. Breakers 8 to 10 feet high and seaweed have been sighted in the vicinity of the 2½-fathom spot. In 1975, soundings of 13 fathoms were recorded within 100 yards of the 2½-fathom spot. A sonar evaluation indicated that this area may be a seamount about 300 to 500 yards wide. Mariners are urged to exercise caution in the area.

(1148) In June 1981, a 14-fathom spot was reported about 9.4 miles SSW of the 2½-fathom spot, in about 51°57'35"N., 176°39'48"E.

(1149) Currents up to 5 knots were encountered in the area of shoals between Kiska and Buldir Islands. The set was to the N or NE on the flood. NW of Buldir Island the set was always N. Currents are believed to be moderate except near shoals or islands.

(1150) **Middle Reef,** a rocky shoal covered 3 fathoms, is 22 miles S of Buldir Island; it is not marked by kelp. Thin kelp extends for 1 mile S of the reef and from the appearance of the area on the swell, depths of less than 3 fathoms probably exist.

(1151) **Tahoma Reef,** upon which the cutter TAHOMA was lost in 1914, is 33 miles S of Buldir Island. The main reef, which has an E-W length of 1.3 miles, breaks at the E end in a light swell, and for its entire length in a moderate swell. Kelp beds extend 1 to 3 miles from all sides of the reef. A current velocity of 1.5 knots was observed in the vicinity of the reef. (See the Tidal Current Tables for predictions.)

(1152) **Charts 16421, 16423.**–The **Near Islands** include the Semichi Islands and Attu and Agattu Islands.

(1153) The **Semichi Islands** are Shemya, Nizki and Alaid. Shemya Island, the easternmost of the group, is about 65 miles WNW from Buldir Island. Alaid Island, the westernmost, is about 16 miles E by S from Attu. The group trends WNW over a distance of 11.5 miles. The islands have numerous lakes, are covered with tundra, and are treeless. The shores are fringed with reefs and rocks, some as far as 1 mile offshore.

(1154) Currents estimated to exceed 1 knot occur E and W of the Semichi Islands and in the passes between them. S currents have been reported in the area between the Semichi Islands and Agattu.

(1155) **Ingenstrem Rocks,** 14 miles SE from the E end of Shemya Island, is a group of four visible rocks and several others that uncover. The highest and northernmost of the group is 9 feet high. The rocks are in an area about 350 yards in diameter.

(1156) Depths of 3 to 9 fathoms extend 2.2 miles SE from the 9-foot rock. This reef probably breaks along its entire length during heavy weather. Vessels should not approach the rocks closer than 3 miles on the SE, and 2 miles on the N and W.

(1157) **Charts 16436, 16423.–Shemya Island,** 3.8 miles long and 1.8 miles wide, slopes gradually from the shoreline on the S to a round bluff 250 feet high along the N shore. A 111-foot tall building is at the top of the bluff. An aero radiobeacon is at the W end.

(1158) The shoreline of Shemya Island is generally fringed with reefs except for a few short stretches of sand beach. Rocks, kelp, and shoals extend 0.6 mile N of the N point of Shemya. The outermost offshore danger is a 4¼-fathom shoal, 0.6 mile off the N shore. A danger zone extends 40 miles off the S shore of Shemya Island. (See **334.1290**, chapter 2, for limits and regulations.)

(1159) Several prominent rocky islets, highest 56 feet, are 0.7 mile off the NE coast of Shemya Island. About 0.3 mile NW of these islets is a rock covered 3 feet, which breaks much of the time. Foul area extends offshore to within 0.2 mile of the rocky islets. Between the outer end of the foul area and the islets is a channel which may be used by launches.

(1160) The waters for 1.2 miles E and S of the E point of Shemya Island are foul with visible and covered rocks; the area is marked by kelp. Shoals with depths of 9 fathoms or less and marked by kelp in the summer are 4 miles S and SSE of the point.

(1161) **Alcan Harbor,** on the NW side of Shemya Island, is protected on the E and S, somewhat protected on the W, and is wide open to N weather. When the seas are running, breakers can be seen along the submerged remains of a former breakwater which extends about 0.4 mile N from the point on the W side of the harbor. A wreck marks the end of the point and the submerged remains are marked by kelp. Several rocks are visible at low tide up to 100 yards N of the point; mariners are advised to exercise extreme caution in this area. On the W side of the harbor is a 333-foot sheet pile wharf with a 250-foot mooring face with a deck height of 23 feet and a depth of 27 feet alongside. In the middle of the harbor lies a wreck on a reef which is marked by kelp. Depths in the harbor cannot be relied upon because of the frequent changes, and vessels should be extremely careful of the natural and structural hazards. In September 1982, it was reported that a strong current had been observed to enter the harbor from the N, move in a clockwise direction around the head of the harbor, and exit W past the point. The diurnal range of tide is 3.4 feet in Alcan Harbor.

(1162) (See page T-8 for **Shemya climatological table.**)

(1163) The S side of Shemya Island is mostly fringed with reefs and rocks that extend as much as 1 mile off, but there are short stretches of sandy beach. **Skoot Cove,** 0.7 mile from the W end of the island, has depths of about 2 fathoms, and small boats may find shelter here when weather conditions prevent landings in

Alcan Harbor. In 1970, it was reported that the submerged remains of a former breakwater extend about 100 yards seaward in a 150° direction from a point (52°43'00"N., 174°04'15"E.), on the W side of the cove. The cove has been used as a dump and is reported to be filled in N of 52°43'N.

(1164) **Hammerhead Island,** 55 feet high and 0.5 mile W of Shemya Island, is the southernmost of several small islands surrounded by foul ground near the middle of **Shemya Pass,** which is between Shemya Island and Nizki Island. The controlling depth through the passages on either side of Hammerhead Island is about 13 feet, but the E passage is the preferable of the two. During stormy weather or when swells are running high in the Bering Sea or the Pacific, heavy breakers are likely to be encountered in the passages.

(1165) **Chart 16435.–Nizki Island,** between Alaid and Shemya Islands, is 3 miles long and 1 mile wide, and is nearly connected to Alaid by a shifting sandspit. The island with a high point of 165 feet is lower than either Alaid or Shemya. The shoreline is very irregular and is fringed by numerous rocks, reefs, and kelp-marked shoals. Narrow channels between the reefs lead to small coves which provide shelter for small boats.

(1166) During NW to NE weather there is good protection in an anchorage 1 to 2 miles S of the narrow passage separating Nizki and Alaid Islands in 10 to 20 fathoms, hard bottom.

(1167) **Alaid Island** is 3 miles long and about 1 mile wide. The E part is low rolling tundra; the W part is made up of four hills, two of which are over 600 feet high. Most of the shoreline is rocky and fringed with reefs, but there are several bights that might provide anchorage for small boats in an emergency.

(1168) A dangerous 1-fathom shoal is 0.9 mile W of the W end of Alaid Island. Seas pile up on this shoal and much of the time it is marked by a breaker. Currents are strong in the vicinity and cause rips when the wind and sea are opposed. The deep channel between this shoal and the shore reefs may be used by launches under favorable conditions but is not recommended for large vessels.

(1169) **Chart 16421.–Attu Island,** the westernmost of the Aleutians, is 15 by 35 miles in extent and is indented by many bays and long inlets. The terrain is rugged and has practically no large level area. The bays on Attu Island offer a striking similarity. They are apparently formed by submerged valleys between mountain ridges. The heads of the bays are fed by streams which have carried down enough sand to give a good holding ground. The exception to this is Holtz Bay, which is rock and sand. At the head of each bay is a crescent-shaped, sand beach with a more or less high bank of sand across the middle. A course down the middle of the bay, with the exception of Massacre Bay, was found to be clear; all that have been investigated show deep water close inshore. Some have rocks along the shore but these are easily seen. Anchorages are in from 10 to 15 fathoms, sand bottom. The best method is to head into the bay until these depths are reached and anchor. At the heads of most of the bays are barabaras (huts) built by the Aleuts for use during the fur-trapping season.

(1170) **Currents.**–Strong currents may be encountered along the N coast of Attu Island, and while variable, the consensus seems to be that they follow strong winds and are noticeably affected by the weather. In calm weather the set is generally SE.

(1171) Survey operations in recent years have roughly defined tidal currents crossing the chain here, setting in a general NW and SE direction at the flood and ebb respectively, except as diverted by shoal and land areas. Slacks follow the times of local high and low water except for a lag at times as great as 1 hour.

(1172) **Chart 16432.–Chirikof Point** is the end of the long peninsula jutting E from Attu Island. This peninsula forms the N side of Massacre Bay and its approaches and the S side of Sarana Bay. It is mountainous and has several deep valleys running approximately N and S across it. Its shores are rock or boulders; it has rocky bluffs on the N shore, and like most of the land areas in the Aleutians, gentler slopes and fewer bluffs along the S shore. **Alexai Point,** midway along the S side of the peninsula, is flat and low with sand beaches in the E and W bights. Foul areas surround this point for 1 mile. The channel to Massacre Bay passes 0.8 mile SW of this point.

(1173) As a rule the peaks on Attu Island are clouded in and are of little use to the navigator in making a landfall. Peaks on the peninsula are no exception to this rule. The lower hills and summits on Chirikof Point are frequently clear when the peaks are cloud covered and consequently a landfall here is not as difficult. The end of the point is paralleled by a ridge of varying elevation, more or less crescent shaped, that extends from the SE to the NE extremities of the point. The highest part of this ridge is a peak 1,315 feet high, approximately at the center of the point (N and S). The ridge terminates at its NE end in **Buchanan Point,** a prominent knob and headland 320 feet high. To the S and SE of the summit, the ridge slopes down to a prominent 755-foot knob-topped hill and then drops still lower to a flat ridge carrying out E to the end of **McCloud Head.**

(1174) A prominent black islet, 10 feet high, is about 0.5 mile NNE of Buchanan Point. Low rock ledges, mostly bare at high water, make out in an E direction from the S part of the point. A fair anchorage in 15 to 25 fathoms, sand bottom, can be had in the bight between the two extremities of the point with good protection in SW to NW weather.

(1175) A 2-foot-high rocky islet is 2.4 miles ESE from McCloud Head. E, S, and SW of this islet for 0.8 mile are shoal areas of 7 to 10 fathoms. No dangers were found except close in to the islet, but the area should be avoided and the rocky islet approached no closer than 1 mile as the bottom is ragged and currents are strong. A safe channel exists W of this islet and 1 mile E of McCloud Head.

(1176) Reefs and kelp patches extend off the shoreline between Alexai Point and McCloud Head to a distance of 0.5 mile. Anchorage can be had under this shore inside the 20-fathom curve, having due regard for the charted foul areas. The bottom is hard, however. A prominent waterfall on this shore is about middistance between the two points.

(1177) **Massacre Bay,** on the S side of Attu Island 6 miles W of Chirikof Point, is 4 miles wide between Alexai Point on the E and **Murder Point** on the W, and recedes for about 3.5 miles in a N direction. Numerous shoal areas obstruct the bay but wire-dragged channels lead to the harbors. A radiobeacon is on the W side of Pyramid Cove.

(1178) **Caution.**–Earthquake activity, in 1975, in the Attu Island area has caused a bottom uplift of 4 to 7 feet at various locations in Massacre Bay. Until more complete information is developed, mariners are advised to exercise extreme caution as depths may vary from those charted and mentioned in the Coast Pilot.

(1179) Anchorage in Massacre Bay can be had in 10 to 20 fathoms; the bottom is volcanic ash and sand with some clay. The bay

is protected on the N, E, and W by Attu Island, and in S weather heavy swells are broken up by off-lying reefs.

(1180) The diurnal range of tide is 3.3 feet in Massacre Bay. (See the Tide Tables for daily predictions.)

(1181) In 1967, it was reported that the piers at the head of Massacre Bay and in **Pyramid Cove** were in ruins at the surfline, and only the pier in **Navy Cove,** close NE of Pyramid Cove, was usable in this area. Numerous obstructions were reported to exist in Pyramid Cove and in the rest of the bay. Shallow-draft craft can tie up to dolphins behind the breakwater in the SW part of **Casco Cove,** which is midway between Pyramid Cove and Murder Point, 2.3 miles to the S.

(1182) **Pilotage, Navy Cove**.–Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(1183) The Aleutian Islands are served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(1184) Vessels using Southwest Alaska Pilots Association pilots and en route to Navy Cove can meet the pilot boat about 1.3 miles S of Murder Point (52°47.7'N., 173°11.7'E.).

(1185) The pilot boat can be contacted by calling "NAVY COVE PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(1186) An abandoned U.S. Coast Guard loran tower is located on the shore of Pyramid Cove.

(1187) **Chart 16433.–Sarana Bay** is 5 miles W of Chirikof Point and on the opposite side of the peninsula from Massacre Bay. From Buchanan Point to the head of Sarana Bay the shoreline is rocky and precipitous with few valleys of appreciable depth. Mountainous terrain carries abruptly to the water with few off-lying rocks or ledges except at the small points. The S side of the bay and approaches consist of rock bluffs with close inshore rocks and pinnacles. **Square Point**, 3.5 miles W of Buchanan Point, is difficult to identify as none of the numerous points in this locality are prominent; however, the waterfalls on either side of Square Point are fairly prominent.

(1188) The head of Sarana Bay and also Hodikof Bay are low sand beaches. At **Hodikof Point** rocky bluffs begin again and continue to Holtz Bay. A chain of rocks and reefs, including **Hodikof Island,** makes out about 1.2 miles E from the small point at the N side of the inner bay. N of this chain of reefs is **Hodikof Bay.** A small-boat passage is W of Hodikof Island between Sarana Bay and Hodikof Bay. A low single-pinnacle rock, 4 feet high, is off the approaches to Hodikof Bay about 0.5 mile SE of Hodikof Point. About 0.7 mile ENE of Hodikof Point is an extensive area of irregular bottom with a least depth of 1½ fathoms, which breaks in a heavy swell.

(1189) Sarana Bay is not recommended as an anchorage except for medium and small craft, as a cable area extends through the middle of the bay and in the position of the only ship anchorage. Smaller craft may anchor N or S of this area depending upon weather conditions, or in Hodikof Bay. Also an emergency anchorage may be had along the shore W of Chirikof Point in not less than 15 fathoms but the bottom is hard and irregular and is subject to considerable current. Hodikof Bay seems to be the best anchorage for medium and small craft in this locality but it should be entered with suitable visibility. Approach on a W course, passing 400 yards S of the 4-foot rock off Hodikof Point. Anchor in the middle of Hodikof Bay in 10 to 12 fathoms, sand bottom. This anchorage is exposed to weather from the N around to the SE. SE to SW winds blow with considerable force in Sarana Bay, probably augmented in funneling through the passes across the peninsula. Their effect in Hodikof Bay is not known.

(1190) **Kelliher Cove** is a small bight 0.5 mile S of **Khlebnikof Point.** Small craft may obtain shelter from weather from S to NW. The shores are rocky except at the head of the cove which has a short gravel beach. The bottom is hard.

(1191) From inner Sarana Bay to Holtz Bay the coast is rocky but with gentle slopes back to the mountains in the interior. E of and close inshore from Khlebnikof Point are off-lying rocky islets, 5 to 15 feet high, that serve as landmarks when cruising close inshore. **Middle Peak,** 2,000 feet high, is the highest point between Sarana Bay and Holtz Bay, but is usually covered by clouds.

(1192) **Gibson Islands,** are on the N side of the entrance to Chichagof Harbor, the largest island is a flat-topped grass-covered island, 104 feet high. The smaller islets at the SE limits of this group are bare pinnacles. **Cooper Islands,** 0.5 mile W of Gibson Island, may be identified by the sheer pinnacle, 125 feet high, constituting the S half of the middle island.

(1193) **Kennon Island,** a 92-foot grass-covered island about 0.3 mile long, is at the NW side of the mouth of Chichagof Harbor. A narrow and shoal channel into the harbor is W of this island. **Middle Rocks** and **Inner Rocks** are low bare rocks 10 to 20 feet high. Middle Rocks are adjacent to and E of Kennon Island; Inner Rocks are adjacent to and S of the island. The main channel is SE of these rocks.

(1194) **Pisa Point,** on the S side of the harbor entrance, is a low point ending in a reef. **Pisa Tower** is a prominent leaning pinnacle 44 feet high on the point. A rock that uncovers is 140 yards N of the point.

(1195) **Chichagof Point,** between Chichagof Harbor and Holtz Bay, is reasonably flat and 300 feet high. The shores are rocky bluffs.

(1196) **Chichagof Harbor** is small in area, shoal, and holding bottom is poor, but it is well sheltered, although SE to SW winds appear to funnel through the valleys into the bay with augmented velocity. There is little or no current effect. The bay is about 0.7 mile wide and allows little swinging room except for small craft. About 18 feet at low water can be carried into the head of the harbor where depths are about 6 fathoms. Turns are sharp for medium craft. Fifteen feet is recommended as the maximum draft of vessels entering this harbor because of the concrete anchor clumps which stand 3 to 4 feet above the bottom. The bottom is mostly hard or gravel.

(1197) The head of Chichagof Harbor is a sand beach divided into two parts by a rocky point. Other shores of the bay are ledge or boulders. The N part of the bay, SW of Kennon Island, is shoal and is recommended for small craft only. In the central part of the bay is a relatively large area of depths from 15 to 18 feet, with scattered kelp. The channel is N and W of this area. The village of **Attu,** at the head of the bay, has been razed. There is a dock, suitable for small craft, on the SW side of the bay. Depths at the dock shoal from 10 feet at the outer end to 4 feet 50 yards inshore. A road leads across the island to Massacre Bay.

(1198) **Range Point** is 400 yards SW of Inner Rocks. A 2½-fathom spot is 200 yards N of Range Point.

(1199) The diurnal range of tide is 3.6 feet in Chichagof Harbor.

(1200) **Holtz Bay,** the first bay W of Chichagof Harbor, is the largest and the most spectacular on the N coast of Attu Island. It is a broad-mouthed bay thrusting deeply into the island and hav-

ing bluff-bordered beaches backed by tundra-covered mountain masses on both sides.

(1201) The head of the bay is divided into two arms, separated by **Center Point,** a promontory about 500 feet high and having moderate, tundra-covered slopes. At the head of each arm is a broad sandy beach with low valleys beyond cutting back into the interior.

(1202) Holtz Bay is free from dangers except for inshore reefs. It may be entered on any course provided the shoreline is given a berth of at least 0.5 mile until the inner arms are reached. When 0.5 mile from Center Point and about abeam of a rocky islet off the W shore, take up a midchannel course down either arm. Anchor in 5 to 6 fathoms in **West Arm** and in 6 to 7 fathoms in **East Arm.** Vessels also anchor at the entrance to West Arm in 10 fathoms. The bottom in most of Holtz Bay is a fine gray sand, with shells and some boulders. The holding properties are fair.

(1203) Holtz Bay offers protection from S and W weather, but strong winds may draw up through the passes, especially in the fall and winter. One vessel reports having had an excellent lee from strong W winds when anchored in 17 fathoms in the central part of the bay about 0.6 mile off Center Point. The bay is wide open to storms from the N and E.

(1204) **Chart 16421.**–W of Holtz Bay the N coast of Attu Island is precipitous, rugged and fairly straight for 7 miles. A number of reefs and rocks, all less than 0.3 mile from shore, are off this coast. Except for these inshore rocks this stretch of coast is free from dangers.

(1205) **Austin Cove** is an open bight about midway in this 7-mile stretch of coast. It offers some protection from S weather to small boats anchoring close inshore. A ledge terminating in a rock awash at high tide makes off the W side of the cove. A rock ledge, which projects from the inner part of the cove for 0.3 mile, must be avoided.

(1206) **Steller Cove** is a wide bight in the coast about 10 miles W of Holtz Bay. Three open coves further indent the coastline of this bight. The shoreline is bluff-lined except for the stretches of sandy beach in the middle and W coves. The only dangers to navigation are the close inshore rocks.

(1207) **Local magnetic disturbance.**–Differences of as much as 4° from the normal variation have been observed in Steller Cove.

(1208) The westernmost of these coves offers the best anchorage. Some protection from S and W weather may be obtained here. To enter the anchorage, steer **210°,** heading about 200 yards W of a prominent grassy knoll at the head of the cove. Anchor in 8 or 9 fathoms, with a fine gray sand bottom. The holding properties of this anchorage are fair. The anchorage offers no protection, however, from N weather. A current setting E along the shore may cause a vessel to lay in the trough of the sea and roll excessively.

(1209) **Red Head,** on the W side of Steller Cove, has a bluff-lined shore with a tableland sloping inland to mountains 1,860 feet high. The upper slopes of these mountains show bare and red and form a distinctive landmark in this region. A shoal area extends N from Red Head and marked currents swirl around this point. Red Head should be passed at least 1 mile off.

(1210) The only dangers from Steller Cove to the W end of Attu Island are the inshore reefs. Vessels can follow the coast with safety 1 mile or more offshore.

(1211) For several miles W of Red Head a low flat strip of land about 0.5 mile wide is between the shoreline and the mountains. Several conspicuous boulders are scattered over this flat. The most conspicuous, a block of rock about 20 feet high in 53°00.8'N., 172°46.4'E., forms an excellent landmark.

(1212) **Earle Cove,** 7 miles W of Steller Cove, is at the W end of the belt of flatland. At the entrance to this small cove are several rocks but anchorage for small boats may be had in 10 fathoms 0.2 mile SW of the larger rock in the cove entrance. Another anchorage in 11 fathoms may be had 0.2 mile S of this same rock. Care should be taken in approaching the anchorage to avoid the kelp and foul ground off the E point of the cove.

(1213) The shoreline for several miles W of Earle Cove is craggy and precipitous, rising rapidly to peaks over 2,000 feet high. **Kresta Point,** 8 miles NE of Cape Wrangell, is a prominent bold headland and marks the W end of this section of rugged coastline.

(1214) W of Kresta Point two small valleys make down to the coast, ending in a stretch of easy-sloping shoreline about 1 mile long. W of these valleys is another region of high mountains and craggy, precipitous shoreline, with a bold headland at its W end. This headland is 5 miles E of Cape Wrangell.

(1215) Two small coves are SW of this headland. W, between the coves and Cape Wrangell, the shore is bold and precipitous, with a few islets, rocks and reefs near the shore.

(1216) The current sets E on the flood and W on the ebb along the N coast of Attu Island near Cape Wrangell. Velocities of 1.5 knots have been observed and may reach 3 knots during spring tides. A current velocity of about 1 knot, 5 miles NE of Cape Wrangell, sets ENE on the flood and SSW on the ebb.

(1217) **Chart 16430.–Cape Wrangell** is the westernmost extremity of Attu Island. The cape appears as a string of rocky, rugged islets, about 150 feet high, reaching out from a mountainous ridge. This ridge is bold and steep with a summit about 1,800 feet high.

(1218) On **Peaked Island,** just off the cape, a natural bridge and buttress forms an opening which has the deceptive appearance of a large patch of snow against the dark rocks. This is a distinctive landmark to vessels N and S of the cape.

(1219) A rock 3 feet high is about 0.3 mile W of Peaked Island. Breakers usually mark this rock.

(1220) Cape Wrangell should be rounded at 1.5 miles distance. At maximum current the heavy tide rips extend for about 3 miles off the cape.

(1221) SE of Cape Wrangell, inshore currents were observed setting E at times.

(1222) Cape Wrangell is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the rookery. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(1223) Between Cape Wrangell and Etienne Head, the mountainous coastline is indented by two coves. A shingle beach is at the N end of **Wrangell Cove,** the E of the two. Small boats have made landings on this beach.

(1224) **Etienne Head** is a moderate-sized headland about 120 feet high. A group of large black rocks and reefs are off the headland.

(1225) **Etienne Bay** is the first large bay E of Cape Wrangell. It is broad and open, and has high mountains on both sides and a long sandy beach at its head. A low valley and a pass run inland from this beach.

(1226) The bay is clear of dangers to navigation except for the reefs and kelp patches that border the E and W shores. The W shore should be given a berth of at least 0.5 mile. The bottom shoals gradually as the bay is entered. Deep-draft vessels can an-

chor in 14 fathoms in midbay about 1 mile from the head. The bottom is fine green sand and pebbles and has fair holding properties.

(1227) A perpendicular-sided table-topped shelf about 500 feet high is on the E shore 1.5 miles from the head of the bay. This makes a good landmark from seaward.

(1228) Etienne Bay is wide open to S and W storms, and because of the lack of protection is not recommended as an anchorage except in N or E weather.

(1229) **Mikhail Point** marks the SE approach to Etienne Bay. It is a broad, gently sloping headland with a terrace-sided shoulder near its NW part.

(1230) A narrow-mouthed cove cuts into the SE tip of Mikhail Point. This cove offers good protection to small boats, but the swinging room is very limited.

(1231) Mikhail Point should be given a berth of at least 0.5 mile by deep-draft vessels.

(1232) **Abraham Bay,** E of Mikhail Point, is the second major bay E of Cape Wrangell. It is wide-mouthed, narrowing to an inner arm at the NE end. This arm has parallel shores and a short, sandy beach at its head. The mountains surrounding Abraham Bay rise steeply from the shoreline to between 1,500 and 2,000 feet high. The steep, rugged slopes of the inner arm give it a fiord-like appearance.

(1233) An unusually large waterfall on the NW shore of Abraham Bay, 2.5 miles E of Mikhail Point, is a conspicuous landmark, even to ships offshore.

(1234) A group of rocks and reefs mark the W side of the approach to the inner arm of Abraham Bay. The highest of these, a steep-sided rock 48 feet high, is an excellent landmark for vessels entering the bay. Vessels should steer a course to pass not less than 0.5 mile off this rock, rounding it at that distance and then heading toward the middle of the sand beach at the head of the inner arm. Anchorage is found E of the innermost low flat reef in 13 fathoms, gravel bottom. The holding properties are only fair. This anchorage offers some protection from N and E storms, but is exposed to the W and S. In addition, fierce strong winds often draw through the inner arm, when no winds are noticeable off the approaches to the bay.

(1235) The E shore is clear of dangers except for the almost continuous string of reefs close inshore. The greatest dangers are the rocks almost 0.4 mile offshore 1 and 2.5 miles N of Chuniksak Point.

(1236) **Chuniksak Point,** between Abraham Bay and Nevidiskov Bay, is a broad, three-pointed promontory sloping moderately upward and back to two mountain ridges.

(1237) Small-boat landings have been made in the cove just NW of the easternmost point of Chuniksak Point.

(1238) A current with a W set has been noticed close inshore around this point.

(1239) **Nevidiskov Bay,** on the SE side of Chuniksak Point, is a fairly open, two-armed bay, surrounded by an irregular terrain of mountain ridges and valleys. Nevidiskov Bay is fairly clear of dangers and may be entered on any course, except that Chuniksak Point should be given a berth of at least 0.5 mile and Theodore Point a berth of at least 1 mile.

(1240) The steep sided, rocky islet, 38 feet high, S of the point separating the two arms of the bay is a landmark for vessels entering the bay.

(1241) At the head of the E arm of Nevidiskov Bay is a flat, sandy beach. Vessels of any draft can anchor off this beach in 15 to 17 fathoms, 0.7 to 1 mile E of the 38-foot islet. The bottom is fine gray sand mixed with small round boulders. It has fair holding properties.

(1242) This bay offers shelter for any draft vessel from NW through NE to SE storms. It is open and exposed, however, to storms from the SW quadrant.

(1243) Low rocks and reefs fringe most of the E shore of the bay for as much as 0.3 mile offshore. Kelp is found over and around these rocks.

(1244) The W arm of Nevidiskov Bay is constricted and has a rocky, submerged ledge across its inner part.

(1245) **Theodore Point,** between Nevidiskov Bay and Temnac Bay, is a bluff promontory sloping moderately to a knoll-like shoulder and then steeply to the mountain ridge behind. Theodore Point is the southernmost promontory of Attu Island and the knoll-like shoulder is a conspicuous landmark for vessels SE or SW of the point.

(1246) Reefs and rocks fringe Theodore Point on all sides for about 0.3 mile. Kelp patches cover and surround most of these reefs. A dangerous pinnacle rock, covered 5 feet, is 0.5 mile SW of the W end of the point.

(1247) Small boats have landed in the cove on the SW side of Theodore Point.

(1248) W currents were encountered close inshore off Theodore Point during the summer.

(1249) Fog covers the land above the 100- to 200-foot level much of the time in the late spring and summer.

(1250) **Charts 16431, 16423.–Temnac Bay,** the first bay W of Massacre Bay on the S coast of Attu Island, is about 8 miles wide between Theodore Point on the W and **Krasni Point** on the E and indents the island about 4 miles.

(1251) Coming from the E and Massacre Bay it is best to keep at least 1.5 miles off Krasni Point to clear the reef, that extends 1.2 miles S of the point, and the islands along the shore NW of the point. A rock that uncovers 4 feet is 700 yards S of the westernmost island. The W shore should be given a berth of 0.8 mile until well into the head of the bay.

(1252) Large vessels can anchor about 1.5 miles from the head of the bay in 20 fathoms, fine gray sand bottom, of fair holding qualities. Smaller vessels can anchor farther in. The anchorage offers some shelter from strong SE breezes. No williwaws were experienced while survey operations were in progress.

(1253) Temnac Bay is not, in general, recommended for anchorage but it might prove useful in an emergency, and it would be easy to get out of in case of undesirable weather conditions.

(1254) **Charts 16434, 16423.–Agattu Island,** about 22 miles SE of Attu Island, is the second largest and the southerly island of the Near Islands. This island is roughly triangular in shape with the N shore or base of the triangle trending in a WSW direction. The N shore is about 17 miles in length, the S shore 14 miles and the E shore 9 miles in length.

(1255) It is reported that at the time of the Russian voyages of discovery to Alaska that 35 native Aleutian villages were on the island. Many of the sites are in evidence at this time. The island is not at present populated.

(1256) The island is volcanic in origin, and similar in terrain, shoreline, and vegetation to the other islands of the aleutians. Mountain peaks 1,992 feet high are adjacent to the E half of the N shore and 2,080 feet to the SW. The shoreline is rocky and precip-

itous and fringed with close-inshore pinnacles. Boulder or pebble beaches are at the heads of most of the bights; frequently the boulders are outside the low water line which renders landing in small boats, except in a smooth sea, difficult. Water may be boated from streams in most of the bights. Most of the points rise 50 to 200 feet from the water to headlands and then slope more gradually to the interior.

(1257) The peaks are generally obscured by a low ceiling. For this reason the points are the most suitable features for navigational purposes. **Krugloi Point,** the NE end of the island; **Cape Sabak,** the SE end of the island; and **Gillon Point,** the W end of the island, are hills and plateaus sloping to the water's edge or ending in sheer headlands. Gillon Point ends in a low flat-topped headland which appears separated from the island. **Kohl Island,** 156 feet high, is about 2.5 miles W of Cape Sabak and is prominent. Gillon Point should be given a berth of at least 1 mile and Krugloi Point 3 miles.

(1258) Cape Sabak and Gillon Point are Steller sea lion rookery sites. There is a mile vessel exclusionary zone around these rookeries. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(1259) **Armeria Point,** 5 miles NE of Gillon Point, is a sheer double pointed headland 100 feet high, fringed with high pinnacles, and rising to greater elevations a short distance inland. **Patricia Point,** 6 miles W of Krugloi Point, is low and slopes gradually back to the hills inland.

(1260) **Nile Point** on the S side, 2.3 miles E of Gillon Point, is a bold headland. A dangerous breaker is about 0.5 mile off this point. This is one of the few off-lying dangers.

(1261) The hills and plateaus constituting most of the island give the appearance of flat tableland from a distance but in most of the areas are interspersed with numerous valleys.

(1262) It is recommended that medium craft keep outside the 20-fathom curve around the island except when seeking shelter, and large craft outside the 40-fathom curve.

(1263) All anchorages about the island are limited as to shelter, but the island is not large and both medium and large craft can proceed to such anchorages as the prevailing weather requires.

(1264) The currents are weak and heavy tide rips will not be encountered about this island except in rare cases.

(1265) **Patricia Bight** is the best anchorage off the N shore. Extensive kelp beds make well out from the E side of this bight and a long reef makes out from about the deepest part in a N direction, ending in a rock which uncovers. This reef is surrounded by extensive kelp beds. Small craft may proceed to an inner anchorage E of this reef and into the deepest part of the bay. A fox farmer's cabin is at the head of this bight.

(1266) No evidence of kelp or dangers has been found in other parts of the bight except very close inshore. Large or medium craft should anchor in 15 to 20 fathoms, sand bottom, 0.5 to 0.8 mile off the W shore and about E of the end of Patricia Point. Shelter is afforded from SE to SW. W and E swells and sea make into the bay.

(1267) **Binnacle Bay** is a bight 1 mile SW of the end of Patricia Point. Kelp beds are off the N part of the E shore. A kelp bed also makes out from the point at the W side of the deepest part of the bay. The remainder of the area seems to be clear of kelp and anchorage can be had as needed in 17 to 21 fathoms, hard bottom.

(1268) In **Armeria Bay** no dangers were found outside the kelp area. A 10-fathom bank is 1.5 miles E of Armeria Point. Anchorage may be had 0.5 mile SE of the bank in 24 to 25 fathoms, hard sand and rocky bottom.

(1269) **West Cove,** a two-armed bight 1.5 miles SW of Armeria Point, is a fair anchorage for small craft. The bottom is hard and there is insufficient sea room for medium craft. Enter 200 to 300 yards E of an islet off the W side of the entrance. Anchor in the middle of the bay in 15 fathoms or as desired.

(1270) A bight on the S side of the island, 1.5 miles E of Gillon Point, is free of dangers except for the breaker off the end of Nile Point. Anchorage can be had in 17 fathoms, sand bottom, about 0.5 to 0.7 mile from the shore. The bottom is hard sand, scattered rocks and broken shell. Reefs are close inshore and a black detached islet is at the W side of the head of the bight.

(1271) **Otkriti Bay,** on the S side of Agattu Island, is the largest bay on the island affording any protection; it is about 1 mile long and 2 miles wide. Two long narrow islands extend W from the E entrance point; the highest point, 83 feet, of the outer island is a good landmark. About 0.6 mile SW of the outer island is a ½-fathom shoal that breaks in a moderate sea. Anchorage can be had in 20 fathoms, coarse sand and shell bottom, SW of the bold point between Karab Cove and Otkriti Bay proper. Holding properties are fair, but there is no protection from the S and W.

(1272) **Karab Cove,** the bight on the E side of Otkriti Bay, is small - 1 mile long and 0.5 mile wide - but affords the best protection of any anchorage on the island for vessels less than 125 feet in length; it is open only to the SW. The anchorage is in the center of the cove in 12 fathoms, sand and gravel bottom; it is not recommended in S or SW weather.

(1273) **Agattu Roadstead,** on the E side of Agattu Island, is an extensive open bight. Numerous monolithic pinnacles are along the shoreline; **Monolith Point,** which appears black against lighter background, is on the N side of the entrance to **McDonald Cove.** There are no dangers to navigation if the shoreline is given a berth of 0.5 mile. The depth of the roadstead slopes gradually up from about 45 fathoms to 10 or 12 fathoms. The bottom is sand, although there is some rock opposite rocky promontories. Where there is sand it appears to be deep and affords good holding ground. Agattu Roadstead offers little protection from E and but little from N and S, but it is protected from the W, subject, however, to draw winds from that direction. The bight offers suitable anchorage for any type of vessel if weather conditions are favorable.

(1274) A good anchorage is available in this locality off McDonald Cove in 15 to 20 fathoms, sand bottom. Depths seem to be suitable for anchorage alongshore for some distance towards Krugloi Point. Reefs, making out 0.3 to 0.5 mile from shore, extend for 2 miles from Krugloi Point.

(1275) **Chart 16012.**–The area W of Attu Island was surveyed to 170°E in 1946. **Stalemate Bank,** 55 miles W of Cape Wrangell, Attu Island, is a large shoal area with a least depth of 18 fathoms.